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AMERICAN RAILROAD JOURNAL

AMERICAN

# RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

**HENRY V. POOR, *Editor.***

ASSISTANT EDITORS:

JAMES T. HODGE, *For Mining and Metallurgy.*

CHARLES T. JAMES, *For Manufactures and the Mechanic Arts.*

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**No. 136 Nassau Street.**

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# CAUTION

## TO RAILROAD COMPANIES AND CAR MANUFACTURERS.

**THE PATENT OFFICE** having decided in favor of F. M. Ray as the first and true inventor of the India-rubber Railroad Spring, and against W. C. Fuller, who had claimed the same as his invention, and at whose instigation and that of Horace H. Day (who has manufactured the metallic or vulcanized rubber for such springs), several Railroad Companies have infringed, not only upon the rights of the said F. M. Ray, and rendered themselves liable for large damages, but also upon the patent rights of Charles Goodyear, against all of whom suits for damages for infringement will be commenced, in the event of failure to recover compensation speedily against Horace H. Day, against whom several suits are now pending:—all Railroad Companies are cautioned against infringing or pirating upon the said patent rights of said Charles Goodyear, or of F. M. Ray, by the use of such India-rubber car springs, and for all future infringements, actions will be immediately commenced.

Annexed is a copy of the official certificate from the Commissioner of Patents:

COPY.

U. S. PATENT OFFICE, WASHINGTON, D. C.,  
12th September, 1850.

Sir—You are hereby informed that in the case of the interference between your claims and those of W. C. Fuller, upon which a hearing was appointed to take place on the second Monday in August, the question of priority of invention has been decided in your favor. I enclose a copy of the decision.

The testimony in the case is now open to the inspection of those concerned.

Yours respectfully,

Signed **DELLITT C. LAWRENCE**,  
Acting Commissioner of Patents.

To Mr. Fowler M. Ray,  
C. M. Keller, Esq., New York.

In conformity with the above decision, a Patent has been granted to me for the same invention for which Fuller had obtained a Patent dated October 8, 1846, and which was annulled in the U. S. Circuit Court to repeal the Patent granted to Fuller.

In answer to the above, Mr. Kneivitt states in his Advertisement in effect that Mr. Ray obtained his patent by bribing the Commissioner.

When a case has become so bad that parties in their desperation in defense of themselves are compelled, as a last resort, to attack the character of a person holding an office of such high honor and trust as that of Commissioner of Patents of the U. S., what reliance can be placed upon any of their statements? The character of the Hon. Mr. Ewbank, Commissioner of Patents, stands too high with the public to require any defense at my hands; and all attempts by Kneivitt or Day to escape from the charges of having tried to deceive the public and railroad companies, by aspersing the character of Mr. Ewbank, and insinuating that he has been improperly biased or influenced in deciding against W. C. Fuller, and in my favor as the first and original inventor of the spring in question—will only recoil on themselves.

Now what was the question between Fuller and Ray thus decided in favor of Ray?

It was whether Fuller or myself was the first inventor of India-rubber springs, with metallic plates interposed.

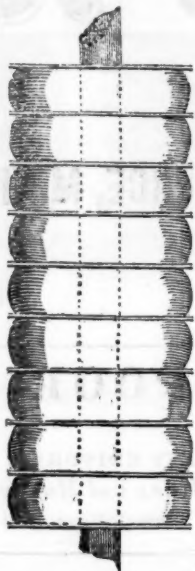
On the 1st August, 1848, I obtained a patent for a form of spring, (about which there is no dispute) which consisted of a cylinder of India-rubber, with circular bands upon the outside circumference. This kind of spring in nineteen cases out of twenty, I may say, has been adopted as the best and most approved form of spring by railroad companies. The validity of this patent was not questioned in this controversy; but the question submitted to the Commissioner of Patents for his investigation and decision, and in respect to which a very large mass of testimony was taken, was whether W. C. Fuller or F. M. Ray was the first inventor of a form of spring, composed of alternate discs or rings of India-rubber, with metallic plates interposed, etc? That question has been decided against W. C. Fuller, and in my favor, as the first inventor.

There is no escaping from this decision, and the parties who hope to do so by injurious imputations against the Commissioner of Patents, who made the decision in this case, will be disappointed.

It will require something more, they will find, than mere assertions or insinuations to produce any distrust of the integrity of the Commissioner of Patents. The testimony in this case clearly proved that I was

the first inventor of the spring in question, and justly entitled to the patent which had been granted to W. C. Fuller for the same invention, and the Commissioner of Patents could not have made any other decision.

The cut given below represents a model for which a patent was granted to Mr. Ray in his contest with Fuller. It is a perfect *fac simile* of the original invention.



A patent was granted to Fuller by the United States on the 22d October, 1846, under the title of "An improvement in Railway Carriages." At this time I was pursuing my experiments with a view to ascertain with greater certainty, the best form of spring for railroad cars, and knew nothing about the invention or patent of Fuller till I applied for a patent shortly afterwards, and received notice from the Patent Office of the interference with Fuller's which this decision has settled against Fuller and in my favor.

Kneivitt says that I made the same application to Mr. Burke, the former Commissioner of Patents, which was refused, without giving the reason why it was refused, leaving it to be inferred without daring to make the assertion openly, that, as between Fuller and Ray, Mr. Burke had decided against Ray; whereas, the fact is, as the record of the case at the Patent Office will show, that the application was refused on the ground that there had been a patent granted in England to Lacy prior to either Ray or Fuller, and that objection, if correct, would prove fatal to a suit by Fuller upon his patent, as well as to a suit by me upon my patent for the same thing; but the Commissioner of Patents, upon a closer and fuller investigation of the English patent granted to Lacy, than was given to it on the first application, has decided that the patent to Lacy is not in the way of a patent either to Fuller or myself, for the form of spring in question—that is, alternate discs of rubber, with metal plates interposed, etc. And, as between Fuller and myself, the Commissioner of Patents has decided that Fuller is not the first inventor, but that I am, and am entitled to the patent in question.

It would seem unnecessary to add anything more; enough I trust has been shown to put the question at rest with the various railroad companies, the parties most interested in this decision.

I ought, perhaps, to say something in reply to Mr. Kneivitt's statements in regard to his and Day's infringement upon Goodyear's patent by the manufacture and sale of Vulcanized rubber, and the publications which they have put forth to induce railroad companies to become parties to the infringement on said patent, and to get them involved in controversy; but as there are a number of suits against Day for damages to a large amount for infringement in this respect and other matters, and particularly as there is a suit by Goodyear against Day, which Day is under

stipulation to try at the next March term of the U. S. Circuit Court, to be held at Boston, unless Day succeeds in putting it off, of which there is very little probability, as I am informed, I shall abstain for the present from saying anything about this subject.

Mr. Kneivitt wisely declines to say anything about the suits of Charles Goodyear against Horace H. Day for damages for infringement of Goodyear's patent, by manufacturing for Kneivitt the vulcanized rubber, of which all these springs, sold by Kneivitt to railroad companies, were composed, and I leave both Day and Kneivitt to answer to the few railroad companies whom they have deceived, and thus rendered liable for large damages for infringement of Goodyear's patent, in the best manner they can.

Kneivitt does not pretend to deny that he has given false assurances to the few railroad companies whom he has thereby induced to infringe upon the springs, which the Commissioner of Patents has decided against Fuller, and in my favor, as the first and true inventor; but, for the purpose of diverting attention from this fact, he still continues to harp upon a separate and distinct patent of mine for railroad springs, which, he says, was for India-rubber and air, and has proved useless. How much truth there is in this assertion may be gathered from the following copy of the claims in that patent, and from the fact that the spring patented by me in 1848, is the most approved form, and the one adopted in nineteen cases out of twenty, and is used on nearly every railroad in the United States.

Copy of the claims in patent granted to Fowler M. Ray, August 1st, 1848:

**FIRST**—In combination with springs made of vulcanized India-rubber, substantially as above described, the use of hoops or bands on the external circumference at the ends, or between the ends, or at the ends, and at any required distance between the ends, substantially in the manner and for the purposes above described.

**SECOND**—I claim combining the elasticity of India-rubber cylinders, substantially such as herein described, with the elasticity of atmospheric air, or other permanently elastic gas, by closing up the ends of such India-rubber cylinders either with discs of India rubber, or the equivalent thereof, such as solid discs of metal, substantially in the manner and for the purposes specified.

This patent bears date 1st Aug., 1848.

I take no notice of the opinions of counsel cited by Kneivitt. Kneivitt ought to know that the paid opinions of lawyers employed in a case, will have no weight whatever. There are always two sides to all causes, and it is the business of counsel to advocate the cause of their clients.

F. M. RAY.

New York, October 1, 1850.

### Coal.

**CUMBERLAND SEMI-BITUMINOUS COAL**  
superior quality for Locomotives, for sale by

H. B. TEBBETTS,

No. 40 Wall St., New York.

May 12, 1849.

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### Ogden & Martin's ROSENDALE CEMENT.

**WE** are prepared to enter into arrangements for supplying our Cement for public works or other purposes. We warrant the cement equal in every respect to any manufactured in this country. It attains a great degree of hardness, sets immediately under water, and is a superior article for masonry coming in contact with water, or requiring great strength.

For sale in tight barrels, well papered, at their office by **OGDEN & MARTIN**, 104 Wall st.

February 16, 1850.

The above cement is used in most of the fortifications building by government.

### Railroad and Mathematical Instruments.

**KUNS & BASELER**, Mathematical Instrument makers, manufacture and keep for sale all kinds of mathematical instruments: also drawing instruments, scales and balances for the use of chemists, professional gentlemen, jewellers, etc., etc., of the most perfect description, at the lowest price, at 81 Nassau street, New York.



**IRON BRIDGES, BRIDGE & ROOF BOLTS,**  
etc. STARKS & PRUYN, of Albany, New York, having at great expense established a manufactory with every facility of Machinery for Manufacturing Iron Bridges, Bridge and Roof Bolts, together with all kinds of the larger sizes of Screw Bolts, Iron Railings, Steam Boilers, and every description of Wrought Iron Work, are prepared to furnish to order, on the shortest notice, any of the above branches, of the very best of American Refined Iron, and at the lowest rates.

During the past year, S. & P. have furnished several Iron Bridges for the Erie Canal, Albany Basin, etc.—and a large amount of Railroad Bridge Bolts, all of which have given the most perfect satisfaction.

They are permitted to refer to the following gentlemen:  
Charles Cook, Canal Commissioners of the State of New York.  
Nelson J. Beach, Engineer of the Bridges for the Albany Basin.  
Jacob Hinds, Railroad Bridge Builders, Springfield, Mass.  
Willard Smith, Esq., Engineer & Bridge Builder, Utica, N. Y.  
Messrs. Stone & Harris, Railroad Bridge Builders, Springfield, Mass.  
Mr. Wm. Howe, Engineer & Bridge Builder, Utica, N. Y.  
Mr. S. Whipple, Railroad Bridge Builders, Springfield, Mass.

January 1, 1849.

**TO RAILROAD COMPANIES AND BUILDERS OF MARINE AND LOCOMOTIVE ENGINES AND BOILERS.**

**PASCAL IRON WORKS.**

**WELDED WROUGHT IRON TUBES**

From 4 inches to 1 in calibre and 2 to 12 feet long, capable of sustaining pressure from 400 to 2500 lbs. per square inch, with Stop Cocks, T, L, and other fixtures to suit, fitting together, with screw joints, suitable for STEAM, WATER, GAS, and for LOCOMOTIVE and other STEAM BOILER FLUES.



Manufactured and for sale by  
**MORRIS, TASKER & MORRIS.**  
Warehouse S. E. Corner of Third & Walnut Streets,  
**PHILADELPHIA.**

**Fire Brick.**

THE Subscribers have constantly on hand Rafford's Stourbridge, Oak Farms Stourbridge, Lister, Worley, Red and White Welsh Fire Bricks, common and fancy shapes. Also,

**ROOFING SLATES,**

from the best Welch quarries, and of all sizes. Also COAL,

of all kinds—Liverpool Orrell and Cannel, Scotch, New Castle, Pictou, Sidney, Cumberland, Virginia, and all kinds of Anthracite coals. Also,

Pig Iron, Salt, etc., etc., for sale at the lowest market price. Apply to

**SAMUEL THOMPSON & NEPHEW,**  
275 Pearl and 43 Gold Sts., New York.

November, 23, 1849.

**Patent India Rubber Steam Packing.**

THIS article, made by the subscriber, who alone is authorized to make it, is warranted to stand as high a degree of heat as any that has been or can be made by any person—and is the article which has made the reputation of India Rubber Steam Packing and the demand therefor. A large assortment of all thick nesses requisite for any description of engines, steam pipes, valves, etc., constantly on hand and for sale by the manufacturer and patentee, who will give every information regarding its properties, mode of use, etc. at the warehouse.

**JOHN GREACHEN, JR.,**

98 Broadway, opposite Trinity Church.  
New York, October, 1849.

**To Railroad Companies, etc.**



The undersigned has at last succeeded in constructing and securing by letters patent, a Spring Pad-lock which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to

**C. LIEBERRICH,**

46 South 8th St., Philadelphia.

November 3, 1849.

**RAILROAD**

**India-rubber Springs.**

IF any Railroad Company or other party desires it, the **NEW ENGLAND CAR COMPANY** will furnish India-rubber Car Springs made in the form of washers, with metallic plates interposed between the layers, or in any other form in which they can be made; in all cases guaranteeing the right to use the same against any and all other pretended rights or claims whatsoever.

F. M. Ray, 98 Broadway, New York.  
E. CRANE, 99 State Street, Boston.  
1849.

**MACHINE WORKS OF ROGERS KETCHUM & GROSVENOR, Patterson, N. J.** The undersigned receive orders for the following articles manufactured by them of the most superior description in every particular. Their works being extensive, and the number of hands employed being large, they are enabled to execute both large and small orders with promptness and dispatch.

**Railroad Work.**—Locomotive Steam Engines and Tenders; Driving and other Locomotive Wheels, Axles Springs and Flange Tires; Car Wheels of Cast Iron a variety of patterns and chills; Car Wheels of Cast Iron with wrought tires; Axles of best American refined iron; springs; boxes and bolts for cars.

**Cotton, Wool and Flax Machinery** of all descriptions and of the most improved patterns, style and workmanship.

Mill gearing and millwright work generally, hydraulic and other presses; press screws; callenders; lathes and tools of all kinds; iron and brass castings of all descriptions.

**ROGERS, KETCHUM & GROSVENOR,**  
Patterson, N. J. or 74 Broadway, New York.

**THE NEWCASTLE MANUFACTURING Co** continue to furnish at the Works, situated in the town of Newcastle, Del., Locomotive and other steam engines, Jack Screws, Wrought Iron Work and Brass and Iron Castings, of all kinds connected with Steamboats, Railroads, etc.; Mill Gearing of every description; Cast Wheels (chilled) of any pattern and size, with Axles fitted, also with wrought tires, Springs, Boxes and bolts for Cars; Driving and other wheels for Locomotives.

The works being on an extensive scale, all orders will be executed with promptness and despatch. Communications addressed to Mr. William H. Dobbs, Superintendent, will meet with immediate attention.

**ANDREW C. GRAY,**

President of the Newcastle Manuf. Co.

**DEAN, PACKARD & MILLS,**

MANUFACTURERS OF ALL KINDS OF

**RAILROAD CARS,**

SUCH AS

PASSENGER, FREIGHT AND CRANK CARS

— ALSO —

SNOW PLOUGHS AND ENGINE TENDERS

OF VARIOUS KINDS.

CAR WHEELS and AXLES fitted and furnished

at short notice; also, STEEL SPRINGS

of various kinds; and

SHAFTING FOR FACTORIES.

The above may be had at order at our Car Factory

REUEL DEAN,

ELIJAH PACKARD,

ISAAC MILLS,

SPRINGFIELD, MASS.

1y48

**Iron Safes.**

**FIRE and Thief-proof Iron Safes,** for Merchants, Banks and Jewelers use. The subscriber manufactures and has constantly on hand, a large assortment of Iron Safes, of the most approved construction, which he offers at much lower rates than any other manufacturer. These Safes are made of the strongest materials, in the best manner, and warranted entirely fire proof and free from dampness. Western merchants and the public generally are invited to call and examine them at the store of E. Corning & Co., sole agents, John Townsend, Esq., or at the manufactory.



Each safe furnished with a thief-detector lock, of the best construction. Other makers' Safes repaired, and new Keys and Locks furnished at the shortest notice.

**H. W. COVERT**

cor. Steuben and Water sts. Albany

August 24, 1848.

**Patent Self-clinching Railroad Spikes.**



These spikes have been in use upon various roads for several years, and have met with universal approval by Engineers. They drive in the manner shown, turning themselves, and are therefore not liable to work loose. They will prove of great value to secure the chair.

We are also manufacturing railroad spikes, hook and flange head; wrought chairs, clamps, etc., of superior quality, and are prepared to contract for any pattern or weight upon favorable terms.

**SMITH & TYSON,**

25 South Charles st., Baltimore Md.



**P. H. Griffin,**

Corner of Steuben and James Sts. Albany, N. Y.

**CONTINUES** to manufacture copper flues for locomotive boilers, brewers' coppers, stills, tanner heaters, etc. Copper work in general, at the shortest notice. He has constantly on hand brass cocks, brass valves, copper pumps of every variety.

Orders promptly attended to.

1y14

**Mattewan Machine Works.**

THE Mattewan Company have added to their Machine Works an extensive LOCOMOTIVE ENGINE department, and are prepared to execute orders for Locomotive Engines of every size and pattern—also Tenders, Wheels, Axles, and other railroad machinery, to which they ask the attention of those who wish such articles, before they purchase elsewhere.

**STATIONARY ENGINES, BOILERS, ETC.,** Of any required size or pattern, arranged for driving Cotton, Woollen, or other Mills, can be had on favorable terms, and at short notice.

**COTTON AND WOOLLEN MACHINERY,** Of every description, embodying all the modern improvements, second in quality to none in this or any other country, made to order.

**MILL GEARING,**

Of every description, may be had at short notice, as this company has probably the most extensive assortment of patterns in this line, in any section of the country, and are constantly adding to them.

**TOOLS.**

Turning Lathes, Slabbing, Planing, Cutting and Drilling Machines, of the most approved patterns, together with all other tools required in machine shops, may be had at the Mattewan Company's Shops, Fish-kill Landing, or at 66 Beaver street, New York.

**WM. B. LEONARD, Agent.**

**Gloucester Iron Works,**

**GLOUCESTER, NEW JERSEY,**

**NEARLY OPPOSITE PHILADELPHIA.**

THE subscribers having made extensive alterations in their works, are now prepared to receive orders for all kinds of Stationary and Marine Engines, Boilers, Locomotives, Sugar Mills, and every description of Mill Work.

Also—Orders for Iron and Brass Castings executed with despatch.

Having secured the valuable services of Mr. David Matthew as Superintendent (who has been for five years foreman in the Iron Works of John Watchman, now the Vulcan Works, Baltimore, and for 12 years superintendent of the Mohawk and Hudson and the Utica and Schenectady Railroads, New York,) they feel confident that all orders entrusted to them will be faithfully executed.

Having an extensive Wharf in front of their works, it will afford a safe harbor for all classes of steam vessels that may require repairs during the winter.

**C. M. & J. C. SITER.**

Gloucester, July 24, 1850.



### NEW YORK IRON BRIDGE COMPANY.

The Bridges manufactured by this Company having been fully tested on different Railroads, by constant use for more than two years, and found to answer the full expectations of their most sanguine friends, are offered to the public with the utmost confidence as to their great utility over any other Bridge now known.

The plan of this Bridge is to use the iron so as to obtain its greatest longitudinal strength, and at the same time it is so arranged as to secure the combined principles of the Arch, Suspension and Triangle, all under such controlling power as causes each to act in the most perfect and secure manner, and at the same time impart its greatest strength to the whole work.

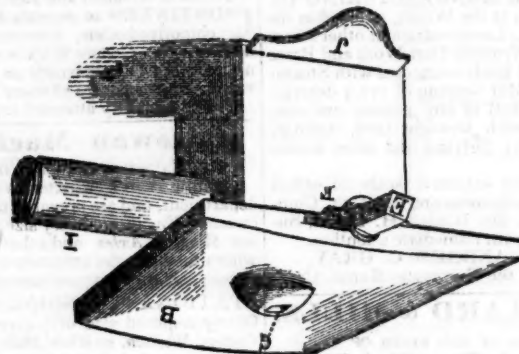
THE NEW YORK IRON BRIDGE COMPANY are prepared to furnish large quantities of Iron Bridging for Railroad or other purposes, at short notice, and at moderate prices.

Models, and pamphlets giving full descriptions of the above Bridge, with certificates based on actual trial from undoubted sources, will be found at the office of the Company, 39 Jauncey Court, Wall st., or of W. RIDER & BROTHERS, 19 Nassau Street, where terms of contract will be made known, and where orders are solicited.

August 29, 1849.

M. M. WHITE,  
Agent for the Company.

### E. Harris' Patent Rotary Blacksmith Tuyere.



LETTERS Patent were issued January 9, 1849, to E. HARRIS, of Springfield, for an Improved Rotary Blacksmith Tuyere. Since that time there have been some hundreds put in operation, giving satisfaction and full proof of superiority over all others.

This Tuyere is so arranged that by one movement it can be changed from the largest work to the smallest; at the same time the fire is changed in proportion, thereby making a great saving in coal. Words cannot convey the full merits of this Tuyere; nor is it deemed necessary to speak in disparagement of other Tuyeres, as every smith is capable of judging for himself, and will give merit where merit is due.

I will simply say that there has not been a single instance where I have had my Tuyere put in use but it has given full satisfaction, and is recommended by all who have used them, as being superior to any other ever introduced. I would invite all to give them a trial; and the names of those using them being given, I hope it may induce others to try them and commend themselves.

Western Railroad Shop,	Springfield, Mass.
Connecticut val.	Pittsfield, "
	Springfield, "
	N. Hampton, "
Hartford	Hartford, Conn.
New Haven	New Haven, "
Norwich and Worcester,	Norwich, "
N. York and N. Haven,	New Haven, "
Saratoga and Whitehall,	Saratoga, N. Y.
Vermont Central,	
Hudson and Berkshire,	Hudson, "
L. Kingsley,	Canton, Mass.

Hadley Falls Co. Ireland,	W. Springfield, Mass.
Sidney Patch,	Boston, "
Ames Manuf. Cor.,	Chickopee, "
American Machine w'ks,	Springfield, "
Dean, Packard & Mills	"
G. Frank Bradley,	N. Haven, Conn.
Andrew Baird,	"
Collis & Lawrence	"
Slate & Brown,	Windsor Locks,
Gage,	Nashua, N. H.
Machine shop,	Manchester, "
Louis F. Lanney,	Baltimore, Md.
J. H. Baerddid,	179 Chambers st. N. Y.
J. Fanning,	Rochester, "
G. W. Hunt	41 Gold st.
Chamberlain & Waldo,	"
P. S. Burges, carriage maker,	"
Samuel Miller,	"
J. Leggett,	Steverson falls, "
J. E. Harris,	Hillsdale, "
John L. Graham,	Albany, "
David Dalsell,	South Egremont, Mass.
Roys & Wilcock,	Berlin, Conn.

Agents for the sale of Tuyeres:  
B. B. Stevens in New York and Connecticut.  
A. J. VanAllen has the Agency for the Western and Southern States, and is now travelling through those States. Any communication addressed to the patentee will receive prompt attention.

E. HARRIS, Patentee,  
Springfield, Mass.

November 23, 1849.

### Railroad Lanterns.

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,  
No. 24 Commercial St. Boston.

August, 16, 1849.

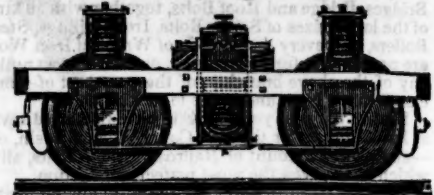
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### Gas Fixtures.

FIXTURES for Burning Gas for Lighting Public Buildings, Private Dwellings, Stores and Factories, manufactured by the subscriber in great variety. Orders by Mail, or left at the Factory on Causeway street, will be promptly attended to.

HENRY N. HOOPER & CO.  
Boston, March 23, 1850. 6m13

### F. M. Ray's Patent India-rubber Car Springs.



India-rubber Springs for Railroad Cars were first introduced into use, about two years since, by the inventor. The New England Car Company, now possesses the exclusive right to use, and apply them for this purpose in the United States. It is the only concern that has tested their value by actual experiment, and in all arguments in favor of them, drawn from experience of their use, are in those cases where they have been furnished by this company. It has furnished every spring in use upon the Boston and Worcester road, and, in fact, it has furnished all the springs ever used in this country, with one or two exceptions, where they have been furnished in violation of the rights of this company; and those using them have been legally proceeded against for their use, as will invariably be done in every case of such violation.

The Spring formed by alternate layers of India-rubber discs and metal plates, which Mr. Fuller claims to be his invention, was invented by Mr. Ray in 1844.—In proof of which we give the deposition of Osgood Bradley, of the firm of Bradley & Rice, of Worcester, Mass., car manufacturers, and men of the highest respectability. In this deposition, in relation to the right of parties to use these springs, he says:

"I have known Mr. Ray since 1835. In the last of May or the commencement of June, 1844, he was at my establishment, making draft of car trucks. He staid there until about the first of July, and left and went to New York. Was gone some 8 or 10 days, and returned to Worcester. He then on his return said he had a spring that would put iron and steel springs into the shade. Said he would show it to me in a day or two. He showed it to me some two or three days afterwards. It was a block of wood with a hole in it. In the hole he had three pieces of India-rubber, with iron washers between them, such as are used under the nuts of cars. Those were put on to a spindle running through them, which worked in the hole. The model now exhibited is similar to the one shown him by Ray. After the model had been put into a vice, witness said that he might as well make a spring of putty. Ray then said that he meant to use a different kind of rubber, and referred to the use of Goodyear's Metallic Rubber, and that a good spring would grow out of it." There are many other depositions to the same effect.

The history of the invention of these springs, together with these depositions, proving the priority of the invention of Mr. Ray, will be furnished to all interested at their office in New York.

This company is not confined to any particular form in the manufacture of their springs. They have applied them in various ways, and they warrant all they sell.

The above cut represents precisely the manner in which the springs were applied to the cars on the Boston and Worcester road, of which Mr. Hale, President of this road speaks, and to which Mr. Kneivitt refers in his advertisement. Mr. Hale immediately corrected his mistake in the article quoted by Mr. Kneivitt, as will be seen by the following from his paper of June 8, 1848. He says:

INDIA-RUBBER SPRINGS FOR RAILROAD CARS.—"In our paper yesterday, we called attention to what promises to be a very useful invention, consisting of the application of a manufacture of India-rubber to the construction of springs for railroad cars. Our object was to aid in making known to the public, what appeared to us the valuable properties of the invention, as they had been exhibited on trial, on one of the passenger cars of the Boston and Worcester railroad. As to the origin of the invention we had no particular knowledge, but we had been informed that it was the same which had been introduced in England, and which had been subsequently patented in this country; and, we were led to suppose that the manufacturers who have so successfully applied this material, in the case to which we referred had become possessed of the right to use that patent. It will be seen from the following communication, addressed to us by a member of the company, by which the Worcester railroad was supplied with the article upon which our remarks were based, that we were in an error, and that the springs here introduced are an American invention, as well as an American manufacture. How far the English invention may differ from it we have had no opportunity of judging."



# AMERICAN RAILROAD JOURNAL.

## STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

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SECOND QUARTO SERIES, VOL. VI., No. 46! SATURDAY, NOVEMBER 16, 1850. [WHOLE No. 761, VOL. XXIII.]

### ASSISTANT EDITORS,

J. T. HODGE, *For Mining and Metallurgy.*  
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### PRINCIPAL CONTENTS.

New York and her Railroads.....	719
Nicaragua Route.....	720
Free Banking in New York.....	721
Traffic of English Railroads.....	721
Illinois Central Railroad.....	721
General Internal Improvements in New York.....	722
Cleansing of Metal Castings.....	723
Galena and Chicago Railroad.....	724
Seaboard and Roanoke Railroad.....	724
Fon du Lac Railroad.....	724
Central Railroad—Ohio.....	724
New Railroad Project in Louisiana.....	724
Returns of Banks in Maine.....	725
Georgia Road.....	725
Coal trade of 1850.....	725
Lexington and Frankfort Railroad.....	725
Baltimore and Ohio Railroad.....	725
Railroads in Massachusetts.....	725
Bank Capital in Massachusetts.....	725
Michigan Southern Railroad.....	725
Ohio and Pennsylvania Railroad.....	725
General Railroad Laws.....	726
Railroads in Vermont.....	726
Railroads in the West.....	726
Sale of Bonds.....	727

### American Railroad Journal.

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#### New York and her Railroads.

New York has not heretofore been regarded as a city largely interested in, nor as enjoying to a great extent the advantages of, railroads. The reason of the indifference manifested on the part of her citizens in a matter considered of so vital importance to some of our leading cities, and Boston in particular, is to be found in the commercial advantages of her position, which without effort secures to her what cost others vast labor to obtain. New York must grow as the whole country grows. It is, and must ever continue, the great commercial mart of this country. Our citizens have too much business constantly on hand, to feel the importance of taking any steps to add to it. They have consequently remained in indifference as to the importance of railroads. Though New York is the commercial money centre of the country, and is aiding

in the construction of a large portion of the lines in progress, her loans are based on railroad securities, and not in the shape of subscriptions to stocks; and are made for the purpose of investment rather than any design to promote the progress of these works.

Though this city feels but little direct interest in railroads, yet every mile of road built in the United States is, to a certain extent, a New York road, as the increased amount of cotton, corn, flour, etc., etc., which they enable the producers to send to market, adds to her business in the same ratio. New York is profited by the public works of every State to a greater amount probably than those immediately engaged in their construction.

Such is her general relation to the country at large. While, as we said before, the great mass of her citizens are not imbued with the internal improvement spirit, she is to possess in a year or more, thanks to the enterprise and energy of a few of her citizens, the most magnificent line of railroads radiating from her that can be found in this country. The influence of these local works is already beginning to be felt, and has already contributed largely to the extraordinary impulse which has been communicated to this great city within a year or two past. She is now reaping the same benefit from these works, that have accomplished so much for Boston. And this benefit will be greater, just in proportion to the greater extent of the lines and the greater fertility and resources of the country traversed. Such is the situation of New York that she can be approached only on one side. Our railroads do not make up so large a part of the coup d'oeil of the city; they do not force themselves so much upon our notice as they do in Boston, where they penetrate the very centre of the city, and cross the most important streets, yet they are accomplishing the same results, and will soon be regarded as of the same importance, as one of the instruments of her growth.

New York has now seven great lines of railroads radiating from her in different directions—the New York and New Haven, Harlem, Hudson River, New York and Erie, New York and Philadelphia, New Jersey Central, and Long Island. The most important of these roads, the New York and Erie, Hudson River, and New Jersey Central, in a business point of view, are still unfinished. The Hudson River road will secure to New York, the Can-

adas, and the eastern part of New England, and must always continue the greatest passenger road in the country, if not in the world. In connection with other roads in progress, it will form an almost straight line between this city and Montreal, the commercial emporium of Canada, and by following the water courses, over the best possible grades. A person has only to look at a map of the country, to be impressed at a glance with the importance of this line, as a great avenue of trade and travel, and as connecting to this city, by the shortest line, the great northern system of natural and artificial communication, and a vast country unsurpassed for its mineral and agricultural resources, filled with populous towns, teeming with every industrious pursuit, and attracting, by its natural beauty, all who have money and time for the recreation of travel. On the northwest, the Erie road, which is now on the eve of completion, is to connect us with the great lakes and the West, by far the most magnificent line of road ever undertaken by any company in this country. On its construction, our communication with the West will be independent of the vicissitudes of the seasons, and will enable us to receive a steady and regular supply from that quarter, of those staples which made up so important a part of the business of this city.

The New Jersey Central is to bring New York into the same intimate connection with the coal mines of Pennsylvania, that is now enjoyed by Philadelphia. An extension of this road to the interior of that State, would in connection with the Pennsylvania Central railroad, form an almost straight line of railroad to Pittsburgh, an event which no very distant day will realise.

New York has been made great by the facilities of water communication which she has enjoyed.—In this she has been immeasurably ahead of all other cities on the continent. She is soon to be as much superior to all others in the extent of her railroads, and in the influences they are calculated to exert. The lines she is now building will connect her with the railroad system of the whole country, and over these lines will flow, as to a common centre, the wealth, the productions, and the trade of every section.

#### Ohio.

The city of Toledo has subscribed \$50,000 to the Toledo and Cleveland railroad.

## Routes Across the Isthmus.

We give this week a portion of a paper, (furnished by Mr. Squier, late Charge d'Affairs to Central America,) to our government, giving a minute account of the topographical features of the country, embracing the Nicaragua route, with a detailed statement of the facilities for the construction of a canal between the two oceans. A large part of public attention will continue to be directed to the projects now before it, for the opening of a communication across the Isthmus, from the influence that they are calculated to exert upon the commerce of the world. The Isthmus of Panama is the key to this commerce, and this is likely to be held by this country, as her citizens hold all the grants of rights of way across it.

The influences that are to flow from opening routes of transportation across it, either by railroad or canal, will by no means be confined to commerce. They are destined to act powerfully upon the political and social condition of the new world. The country through which these routes will run is in many respects the finest in the world, possessing unrivalled commercial advantages, a soil abounding in every kind of agricultural wealth, and with every variety of climate. The whole of this territory is an almost entire forest. With the means of intercourse with it, which we shall soon possess, and with the attractions that it will hold out to the activity and enterprise of the country, we may soon expect to see a large emigration thither in view of a permanent settlement there. Mexico will thus be virtually surrounded by the Anglo-Saxon race.—What shall prevent these coils from being drawn closer and closer, till they shall reach the heart of that country? Will not these movements result in giving this race a foothold on another part of this continent, where it shall expand itself into dimensions which we now behold in a more northern latitude? Who can say what is before us?

Subjoined is the account of Mr. Squier.

## TOPOGRAPHICAL FEATURES OF THE COUNTRY.

Before proceeding further it is necessary to refer briefly to the geographical and topographical features of the State of Nicaragua. These are somewhat remarkable. If an accurate map of Central America existed, it would exhibit in this state a separation of the great chain of the Cordilleras into two divergent ranges, of less general height than the great ridge itself, and having occasional partial interruptions. This divergence takes place in the northern department of Sogovia, one branch extending due southeast toward the Atlantic. Its outposts come down to the very shore, and form the prominent landmarks upon that coast. The range itself intersects the San Juan river about fifty miles above its mouth. Upon its northern base, and nearly parallel to it, flows a large and long stream, the Rio Escondido, better known in the maps as "Bluefields river." All the streams upon the other side of the range fall into lakes Managua and Nicaragua, or into the San Juan river. This range resumes its course upon the southern shore of the San Juan, but now bears nearly due south, connecting with the Pacific range in the elevated regions of Costa Rica.

The Pacific range follows the general direction of the coast, sometimes rising into lofty volcanic cones, but generally sustaining the character of a high ridge, in places subsiding into low hills and plains. This range preserves a nearly uniform distance from the sea of from ten to twenty miles; consequently there are no considerable streams falling into the Pacific for the extent which it continues. It unites, as I have already said, with the eastern range in Costa Rica. The course of this range seems to have been the line of volcanic action, and extinct craters and beds of lava are to be met at short intervals throughout its length. The lofty cones of the Viejo, Santa Clara, Acosusco, Momotombo, Momobacho and Ometepe, not to

mention many others, may be regarded as belonging to this range, and are prominent land marks, and form remarkable features in the landscape.

The two ranges of the Cordilleras, here referred to, form, with their slopes, a great interior basin, not far from 300 miles long by 150 broad, consisting in great part of broad, beautiful and fertile plains. The waters of this wide region fall into the lakes already named, of which the San Juan river is the only outlet. Many of the streams flowing into these lakes, especially from the north, are of considerable size, and furnish a supply of water which could not be sensibly affected by drains for artificial purposes.

The lake Managua approaches at the nearest point, to within four or five leagues of the Pacific, from which it is separated on the south by the range of hills already described, but between its northern extremity and the sea there is only the broad and magnificent plain of Leon, gradually rising, for a distance of 2,725 yards, to an elevation of 55 feet 6 inches, and then subsiding gradually to the ocean.

There is every reason to believe that this statement is not far from correct; and, if so, it must be obvious that it will be entirely practicable to carry a canal from the lake, which will form the summit level, to the ocean, especially as the earth at a short depth is sufficiently firm to sustain itself without the usual guards. This is shown from the fact that the wells of the plain of Leon, which have often a depth of from 80 to 100 feet, do not require the use of artificial means to prevent the earth from falling inwards.

*Section from Pacific to Lake Managua—Tamarinda Line.*—The first line from the lake of Managua to the sea, at the port of the Tamarinda, is considerably shorter than any other, not exceeding fifteen miles in length. But the water of the lake, upon its northwestern shore, is shallow. It was sounded by myself and Dr. Livingston, in July, 1849. It deepened regularly from the shore to the distance of one mile and a quarter, where it attained five fathoms; after that it deepened rapidly to ten and fifteen fathoms, which is, as I was informed by the boatmen, the average depth of the central portion of the lake. The country between these points so far as could be ascertained, it being covered with forests, offers no insuperable obstacle to a canal.—The port itself is small, but well protected, with a considerable stream of fresh water flowing into it. Vessels of 160 tons have frequently entered to load Brazil wood. There is no town or village upon it, and it seems to have escaped general notice. It is said to have all requisite depth for large vessels.

*Section from Pacific to Lake Managua—Realejo Line.*—The second line is that to the well known and excellent port of Realejo, which is properly an estero, formed by the junction of the Dona Paula and Realejo rivers, and protected on the side of the sea by the islands of Cardon and Asserradores, and a bluff of the main land. It is safe and commodious, and the water is good, ranging from three and four to eight and nine fathoms. The volcano of the Viejo, lifting its cone upwards of 6,000 feet above the sea, to the northeastward of the port, forms an unmistakable landmark for the mariner, long before any other part of the coast is visible. This line, starting from the nearest practicable point of lake Managua, cannot fall short of forty five or fifty miles in length. It is said that the Dona Paula might be made use of for a considerable distance—so far as the tide flows; but that can only be determined by actual survey. I can discover no reason why this route could not be advantageously pursued. It has the present advantage of passing thro' the most populous and best cultivated part of the country, and terminating at a point already well known. There is no stream upon this line which, as has been supposed by Louis Napoleon, and some other writers on this subject, can be made available for supplying this section of the proposed canal with water. The "Rio Tosta," of which they speak, (by which, from its described position, it is supposed that the Rio Telica is meant, for no stream known as the Rio Tosta exists) was formerly a stream of some size, but never furnished a quantity of water sufficient to supply a canal. The local geography of the plain of Leon is little known to its inhabitants; and as the roads are hemmed in by impenetrable forests, it is impossible for the travel-

ler to inform himself of the minor topographical features of the country. The Rio Telica empties into the estero of Realejo, and it may possibly be made to answer a useful purpose. I have crossed it at many points where it has (as it has for nearly its entire length) the character of a huge natural canal, from sixty to ninety feet deep by perhaps one hundred and fifty or two hundred yards broad at the top, with steep banks, for the most part of a friable substratum of rock or compact earth. And as, at its source, it is not more than ten miles distant from lake Managua, it is not improbable that, by proper cuttings, the waters of the lake might be brought into it, and, after the necessary level is attained, the bed of the stream might be used from that point to the sea, securing the necessary depth of water by locks or dams. If this suggestion is well founded, the principal part of the estimated excavation of this section of the canal may be avoided. In any event the cutting would not, with the aids furnished by this mechanical age, be an object to deter the engineer. We have examples of much more serious undertakings of this character. In the canal from Arles to Bouc the table land has been cut through to the extent of two thousand two hundred and eighty nine yards, the extreme depth being from one hundred and thirty to one hundred and sixty two feet. The deepest cutting required here, in order to furnish a depth of twenty five feet of water in the canal, or, in other words, to that depth below the level of the lake, would be eighty one feet. I need hardly add that the lake of Managua must supply the water requisite for the use of the canal, from its shores to the sea, as there are no reservoirs or streams of magnitude upon this line.

*Section from Pacific to Lake Managua—line of the Estero Real.*—There is still another route to which public attention has never been generally directed, but which, if feasible, of which I have no doubt, offers greater advantages than either of the others just named, viz., from the northern point of Lake Managua via the Estero Real to the Gulf of Fonseca, or Conchagua. The upper part of Lake Managua is divided into two large bays by a vast promontory or peninsula, at the extreme point of which stands the giant volcano of Momotombo.—Between this volcano and that of the Viejo, to the northeast of Realejo, running nearly east and west is a chain of volcanoes, presenting, probably, in a short distance, a greater number of extinct craters and more evidences of volcanic action than any other equal extent of the continent.—This chain is isolated, and nearly at right angles to the general course of the great mountain ranges. Upon the south is the magnificent plain of Leon, bounded only by the sea, and upon the north is also another great plain, the "Llano del Concho," bounded by the auriferous hills of Segovia. This plain extends from the northern bay of lake Managua to the gulf of Conchagua, which is equalled only by that of San Francisco, and may be described as a grand harbor, in which all the vessels in the world might ride in entire security. It much resembles that of San Francisco, in position and form; the entrance from the sea is, however, broader. Its entire length within the land is not far from 100 miles, and its breadth from 30 to 60. The three states of San Salvador, Nicaragua, and Honduras, have ports upon it. In respect to trade, the principal port on the main land is that of La Union, in San Salvador. All the adjacent coasts are of unbounded fertility, and possess an unlimited supply of timber. The sides of the mountains, particularly the volcano of San Miguel, are covered with oak and pine, suitable for building and repairing ships. Coal occurs in abundance about 60 miles from the port of La Union, on the banks of the Rio Lempa, the roads to the beds leading through a level country. The bay embraces several islands of considerable size and beauty, surrounded by water, of such depth as to enable vessels of the largest class to approach close in shore. The most important of these, from the circumstance of its size and the fact that it commands and is the key to the entire bay, is the island of Tigre, belonging to Honduras.

Into the southern extremity of the Gulf of Conchagua empties a considerable stream or estuary, called the Estero Real, up which the tide flows for many miles. Its course, for a considerable dis-



tance, is near the base of the volcanic range which I have mentioned, and in ascending it the voyager takes a direct course towards the northern and deepest bay of Lake Managua. There is a sand bar at the entrance of the Estero, upon which, at low tide, there is but two and a half or three fathoms of water. The tide rises about ten feet, and, with some artificial improvements, it is said the bar could be made passable at all times. The bar passed, the Estero deepens to six and ten fathoms, and preserves a uniform width of from three hundred to four hundred yards. It is one of the most beautiful natural canals that can be imagined; the banks are lined with mangroves, and it has a dense background of other trees. Sir Edward Belcher, who was here in 1838, went thirty miles up the Estero in a vessel drawing ten feet of water. He says:—"To day we started with the Starling and other boats to explore the Estero Real, which I had been given to understand was navigable for sixty miles; in which case, from what I saw of its course in my visit to the Viejo, it must nearly communicate with the Lake of Managua. After considerable labor we succeeded in carrying the Starling thirty miles from its mouth, and might easily have gone further had the wind permitted, but the prevailing strong winds rendered the toil of towing too heavy. We ascended a small hill about a mile below our extreme position, from which angles were taken to all the commanding peaks. From that survey, added to what I remarked from the summit of the Viejo, I am satisfied that the stream could be followed many miles further, and I have not the slightest doubt, is fed very near the Lake Managua. I saw the mountains beyond the Lake on its eastern side, and no land higher than the intervening trees occurred. This, therefore, would be the most advantageous line for a canal, which, by entire lake navigation, might be connected with the interior of the states of San Salvador, Honduras, Nicaragua, and extend to the Atlantic. Thirty navigable miles for vessels drawing ten feet we can vouch for, and the natives and residents assert sixty (30?) more!" From the course of the Estero, and the distance it is known to extend, it probably would not require a canal of more than twenty to twenty-five miles in length to connect its navigable waters with those of Lake Managua, in which case there would be a saving over the Realejo line, beside having the western terminus of the great work in the magnificent bay which I have just described, where every facility is afforded for victualling, repairing, &c., and where a local trade of vast importance in sugar, cotton, indigo, cocoa and coffee would soon spring up.

It may, therefore, be safely asserted that a passage from the Lake of Managua to the sea is entirely feasible, and it only remains to determine which of the routes here indicated offers the greatest advantages.

**Lake of Managua.**—The Lake of Managua is a fine body of water, and of much larger size than has heretofore been represented. It is certainly not far from fifty to sixty miles in length, by thirty or thirty five in greatest breadth, and ranges from nine to ten and fifteen, and even thirty fathoms in depth. Some considerable streams flow into the lake from the direction of Segovia, and the level of water undergoes very slight change with the different seasons.

With the aid of steamers, and with proper deepening near the shores, there would probably exist no difficulty in making the passage of this lake with the largest vessels. Its sole outlet is the River Tipitapa, or Panalya, which connects it with the Lake of Nicaragua. The distance between the two lakes is about 18 miles, and the difference of level is stated to be 28 feet. The whole of this fall is comprised within the first four miles from Lake Managua. The river below assumes the character of an estuary of Lake Nicaragua, with a wide channel, and from six to fifteen feet of water. The estate of Pasquel, at the head of this estuary, is the limit of navigation. Above for a mile and a half, to "Pasco Chico," the bed of the river is full of large and isolated rocks, resting upon a bed of rock, which seems to be calcareous breccia, but, singularly enough, intermixed with fragments of lava, as well as various granite stones, jasper and other materials. Beyond "Pasco Chico," the bed, or rather the former bed of the river, (for there is

now no water here except what flows from springs or is deposited in large pools in the depressions of the rock by the rains,) is the same solid breccia, worn into basins and fantastic "pot-holes" by the water. Within one mile of the Lake of Managua is the falls of Tipitapa, opposite the little village of that name. It is a ledge of the same rock above described, and is from twelve to fifteen feet in height. The former bed of the stream is here not less than four hundred feet in width.

From the falls to the lake, the ancient bed is wide but shallow, and is now covered with grass and bushes, resembling a neglected pasture. At the time of my visit (September, 1849) at the height of the so-called rainy season, no water flowed through it, and so far as I could learn, none had flowed there for years. I can, however, readily believe that in an extremely wet season a small quantity may find its way through this channel, and over the falls. It is, nevertheless, very evident that no considerable body of water ever passed here. There is an arm of the lake which projects down the old bed for three or four hundred yards, but the water is only two or three feet deep, with an equal depth of soft grey mud, the dwelling place of numerous alligators, with reedy shores thronged with every variety of water birds. The water of Lake Managua, near the so-called outlet, is not deep, and the channel, in order to admit of the passage of large vessels, would probably require to be well dredged, if not protected by parallel piers. At the distance of about three fourths of a mile from the shore, I found, by actual measurement, that the water did not exceed two fathoms in depth. No great obstruction to building the proposed canal exists in the section between the two lakes. The rock is so soft and friable that a channel can easily be opened from Lake Managua to the falls. Beyond this the banks are high for four miles, forming a natural canal, which only needs to be properly dammed at its lower extremity to furnish a body of water adequate to every purpose of navigation. Locks would then be required to reach the estuary from the Lake of Nicaragua at Pasquel. From this point to the Lake I conceive may prove the most difficult part of this section, although apparently the easiest. Where the bottom is earth or mud, the desirable depth of water may be secured by dredging; but where it is rock, as it certainly is, near its upper extremity, some difficult excavations will be required. The banks downward are so low as to prohibit assistance from dams, except by diking the shores.

To be continued.

#### Free Banking in New York.

We copy from Thompson's Bank Note Reporter the following—

**Synopsis of the Bank Laws of the State of New York.**—The owner of bank stock is individually liable for the debts of the bank, to an amount equal to the par value of the stock. The fact that the stock stands in the name of another person does not relieve from liability the real owner. Non-residents are equally liable with citizens of our own state. Any class of creditors can claim the benefits of this liability.

Safety fund banks can take 7 per cent discount from all paper having over 63 days to run, but only 6 per cent from shorter paper.

Free banks can take 7 per cent discount from all paper, without reference to time.

The circulating notes of the safety fund banks are not required to be secured by a deposit with the Comptroller. The circulating notes of the free banks are secured as follows:

- 1st. All New York state stocks.
- 2d. Half N. Y. stocks and half U. S. stocks.
- 3d. Half N. Y. stock and half bonds and mortgages.
- 4th. Half N. Y. stock, and portions of U. States stocks and bonds and mortgages.

The bonds and mortgages must bear 7 per cent interest, and must not exceed in amount two-fifths the value of the property, exclusive of buildings. The property must be unincumbered and productive.

The stocks must be six per cent, or an amount will be deducted which will leave in the Comptroller's hand a security equal to a six per cent stock.

Joint stock banks can organize on not less than \$100,000 capital, and must deposit with the Comptroller not less than \$100,000 of securities for circulating notes.

Individual bankers are not required to have any given amount of capital, but must commence on not less than \$50,000 of securities deposited for circulating notes.

All banks and bankers are required to provide for the redemption of their circulating notes, in New York city or Albany, at a half of one per cent discount.

**Constitutional Prohibitions and Requirements.**—The Legislature cannot grant any special charters for banking purposes.

The Legislature cannot legalize a suspension of specie payments.

All circulating notes must be registered by the authority of the state, and ample security taken for their redemption in specie.

Holders of bank notes are preferred creditors.

We give these leading features of our bank laws for a double object:—

1st. That all parties interested may know their rights and liabilities.

2d. That our readers in the Western States, when the question of banks is under discussion, may have a comprehensive outline of our laws.

#### Traffic of English Railroads.

The aggregate amount of traffic on railways in the United Kingdom during the current year, shows a very considerable increase over the corresponding period of 1849. The published total receipts from the 1st of January to the 29th of September, 1850, amounted to £9,525,707; corresponding period of 1849 to £8,275,679; showing an increase of £1,250,028 for that period. The receipts during the first quarter of 1850 amounted to £2,613,237; second quarter to £3,914,903; and third quarter to £3,697,567, being an increase over the corresponding periods in 1849 of £283,001 in the first quarter; £422,301 in the second; and £544,726 in the third quarter.

A comparison of the traffic returns for corresponding periods of former years also shows the increase to be progressive.

The length of railway in operation over which the traffic was carried in 1850, was 6,075 miles; the latter include 180 miles of canal, the receipts on which are included in the railway traffic returns.

The average traffic receipts per mile indicate the effects of opening so many miles of new railway. The receipts per mile in 1847 exceeded those of 1850 by £491; in 1848, by £256; and in 1849, by £57.—*Railway Record.*

#### Illinois.

##### Grant of Lands of the Central Railroad.

As the recent grant of lands by the general government to this State in aid of the above work is a matter of general interest to the railroad community, and as it may connect itself more or less intimately with other projects, both in that and other States, we give below an abstract of the original charter of this company, together with the amendatory act, and the release of the Cairo City and Canal company. We have presented everything material to a full understanding of the relation sustained by this company to the grant, and also to the State.

How the State will avail itself of this grant remains to be seen. The release is conditional, and the State may not accept it, but we presume that it will. Whether the above company will be allowed to build the road under a modified charter, or whether new companies will be organized for this purpose, is a mere matter of conjecture. We hope at any rate that the money which may be obtained for the lands granted will not follow in the wake of all that the State has formerly had at her disposal.

The first section provides that the president and directors of the Cairo City and Canal company, (incorporated by the state of Illinois) and their successors in office, be, and they are hereby, made a



body corporate and politic, under the name and style of the "Great Western Railway Company"; and the said corporation are hereby authorised and empowered to locate, construct, and finally complete, a railroad, commencing at the city of Cairo, in Alexander county, in Illinois, and thence north, by way of Vandalia, Shelbyville, Decatur, and Bloomington, to a point on the Illinois river at or near the termination of the Illinois and Michigan Canal, in such manner and form as they shall deem most expedient.

The second section provides that the immediate direction and government of the affairs of said company shall be vested in a board of not less than five directors, who shall be chosen by the members of the Cairo City and Canal company, at the annual meeting, as provided by the ninth section of the act of its incorporation, and who shall hold their offices until others are duly elected and qualified to take their places as directors. Provided, That the first board of directors to be elected under the provisions of this section may be chosen at any time before said annual meeting.

The third section provides that the president and directors for the time being are hereby authorised and empowered, by themselves or their agents, to execute all the powers herein granted to the company, for the purpose of locating, constructing and completing said railroad, and for the transportation of persons, goods and merchandise; and all such other powers and authority for the management of the affairs of the company not heretofore granted, as may be necessary and proper to carry into effect the objects of this company, for the use of the road, for the transportation of persons, goods and merchandise.

The ninth section provides that the capital or funds which may be required and are necessary from time to time for the objects authorised by this act, shall be obtained by the sale of bonds or obligations, to be issued in the name of and upon the sole security of the whole property, estate and income of the Great Western railway company, and which indebtedness may be made payable at such times and places, and with such rates of interest, and in such form and manner, as the directors of the said company for the time being shall deem proper and expedient.

The sixteenth section provides that whenever the said company shall have paid and discharged all its obligations and indebtedness, assumed or entered into under the provisions of this act, that then, and forever thereafter the said company shall be held to pay to the treasurer of the state of Illinois, for the use of the state, one fourth of the whole net income annually received from the road herein authorised to be made.

The above charter having been forfeited by failure to comply with its provisions, an act was passed February 10th, 1849, reviving under certain stipulations the privileges before granted.

The first section of this act provides that the president and directors of the Cairo City and Canal company, under the name and style of the "Great Western Railway Company," chartered March 6th, 1843, and that Wm. F. Thornton, Willis Allen, Thomas G. C. Davis, (and 26 others) be associates with said company in the construction of said railroad, and are hereby empowered and reinstated, with all the powers and privileges contained in said act of incorporation, and are also subject to all the restrictions contained in said act—the act in force March 3d, 1845, which repealed the charter of said company, to the contrary notwithstanding; and are also subject to such other restrictions and privileges as are hereinafter granted and provided.

The second section provides that said company are hereby authorised and empowered to construct, continue, and extend, said railroad described in said charter, from the termination set forth in said charter, at or near the termination of the Illinois

• SECTION 9. The annual meeting of the members of the Cairo City and Canal company shall be held on the first Monday in November, in each year, at Cairo, or such other place as the directors for the time being may appoint, at which meeting the directors shall be chosen by ballot, each proprietor being entitled to as many votes as he holds shares.

and Michigan canal, to the city of Chicago in Cook county, Illinois, in such manner, place and form, as they shall deem most expedient, but in strict conformity to all the forms, contents, obligations, restrictions, powers and privileges, contained in said act of incorporation.

The third section provides that the right of way that the state may have attained, together with all the work and surveying done at the expense of the state, and materials connected with said road, lying between the termination of the Illinois and Michigan canal and Cairo city, are hereby granted to said company upon conditions as follows: Said company shall take possession of said road within two years from the passage of this act, and as far as practicable preserve the same from injury and dilapidation; and said company shall within two years from the passage of this act, expend one hundred thousand dollars in the construction of said road, and two hundred thousand dollars for each year thereafter, until said road shall have been completed from the city of Cairo to the city of Chicago.

The fourth section provides that the governor of the state of Illinois is hereby authorised and empowered to contract with, and agree to hold in trust for the use and benefit of, said Great Western railway company, whatever lands may be donated, or thereunto secured to the state of Illinois by the general government, to aid in the completion of the Central or Great Western railroad, from Cairo to Chicago, subject to the conditions and provisions of the bill granting the lands by Congress; and the said company is hereby authorised to receive, hold and dispose of any and all lands secured to said company by donation, preemption or otherwise, subject however to the provisions of the eighteenth section of this charter.

In consequence of the provisions in this charter, securing to the Cairo City and Canal company such aid as might be granted by the general government to the above road, the Illinois delegation in Congress, or perhaps we should say, Mr. Douglass, refused to assist in getting any aid from Congress, unless the same should inure to the benefit of the state. To remove this obstacle, the Cairo City and Canal company, through Mr. Holbrook, its president, executed the following instrument of release of the franchises or privileges granted under the above acts.

"In consideration of the stipulations and conditions hereinafter stated, the Cairo City and Canal company, by their president, hereto duly authorised by a resolution of the stockholders of said company at a meeting held on the 24th day of December, 1846, hereby release and surrender to the State of Illinois the charter of the Great Western railroad company, and all acts or parts of acts, supplemental or amendatory thereof, or relating to the Central railroad company, together with all the rights and privileges of any kind granted by said charter, or acts, as fully and completely as if the same had never been passed by the legislature; on the following conditions, viz: 1st, That the legislature of said state shall, within the period of ten years from the 1st of January, 1850, construct and finally complete, or cause to be constructed and completed, a railroad from Cairo to Chicago, and that the southern terminus of said road shall be the city of Cairo. 2d, That the legislature of said state shall, during its next session, elect whether to accept or decline their release upon the condition herein stated.

3d, That until said state, through their legislature, shall have made their election, this company may, with the approbation of the governor of the state, proceed in the construction of said road, and if said charter shall be released as aforesaid, to said state of Illinois, the said state shall within one year from the time of said election, refund to this company the amount which, between that period and the present time, shall have been expended in the construction of said road, with six per cent. interest thereon, and shall assume all bona fide contracts hereafter made by this company, in the construction of the same, which shall have been previously approved by the governor of said state.

"In witness whereof, the said company have caused their instrument to be executed by the pres-

ident, authorised as aforesaid, and their corporate seal to be hereto affixed, at the city of New York, this 24th day of December, A. D. 1849.

The Cairo and Canal Co.,  
by their President,  
D. B. HOLBROOK.

In presence of  
J. R. Foy and ELIHU TOWNSEND."

#### Internal Improvements of the State of New York.

A SKETCH OF THE RISE, PROGRESS, AND PRESENT CONDITION OF INTERNAL IMPROVEMENTS IN THE STATE OF NEW YORK.

Continued from page 644.

With all the advantages of the Virginia route, so strongly stated by Washington and Jefferson, ten or fifteen years before the commencement of the present century, and which were again enforced by an address by Chief Justice Marshall in 1832, why is it that the State of New York has been enabled to construct a canal, uniting the waters of the Atlantic and the lakes, which has furnished a sufficient amount of revenue for its own maintenance, and to reimburse in twenty years the principal borrowed for its construction with interest thereon, whilst the route which, in the judgment of the eminent men before named, possessed decided advantages over that of New York, has not progressed so far as to form a connection with the waters which fall into the Ohio?

Joshua Forman, the author of the Legislative resolution of 1808, in favor of a canal from the Hudson to Lake Erie, states, that when he called the attention of Mr. Jefferson to the subject in the following year, the President replied, "it is a very fine project, and may be executed a century hence." In a letter to Governor Clinton, dated in December, 1822, Mr. Jefferson says he does not recollect the conversation, but has no doubt the statement made is correct, "for that, I know, was my opinion; and many, I dare say, still think with me, that New York has anticipated, by a full century, the ordinary progress of improvement." And he adds:—"This great work suggests a question, both curious and difficult, as to the comparative capability of nations to execute great enterprises. It is not from greater surplus of produce, after supplying their own wants, for in this New York is not beyond some other states; is it from other sources of industry additional to her produce? This may be;—or is it a moral superiority?—a sounder calculating mind, as to the most profitable employment of surplus, by improvement of capital, instead of useless consumption? I should lean to this latter hypothesis, were I disposed to puzzle myself with such investigations; but at the age of eighty, it would be an idle labor, which I leave to the generation which is to see and feel its effects."

Since Mr. Jefferson's letter was written, the new State of Ohio, and the old state of Massachusetts, have furnished abundant proofs of the same energy and "capability to execute great enterprises," which excited his wonder and admiration in regard to the Erie Canal. The young state of Ohio, commencing with a population of about 750,000 in 1825, has constructed 800 miles of canals, at an aggregate cost of nearly \$20,000,000, and from 300 to 400 miles of railroads, at a cost of \$5,000,000 to \$6,000,000; while the people of Massachusetts, numbering 603,000 in 1830, have, since that time, constructed 1,000 miles of railroads, at a cost of \$50,000,000.

The expenditure of \$6,000,000 or \$7,000,000 for uniting the lakes and the ocean, was not regarded by the canal commissioners of New York, in their report of 1812, as a matter of very serious consideration to a million of people, possessed of the fertile lands, and enjoying the fine climate of New York. And in the mere matter of creating debt and making expenditures in the prosecution of internal improvements, other states have exhibited much more boldness than New York. But in furnishing the earliest, safest, and cheapest channel of communication with that "rising world" beyond the mountains and the lakes, to which General Washington looked with so much solicitude, the timely efforts of this state, and the importance of the Erie Canal, can scarcely be overrated. It at once opened facilities to the person seeking a new home, which were equivalent to bringing the fertile lands of "the ter-



ritory northwest of Ohio" into "the Genesee country," and offering them to him at ten shillings an acre. The influence of this great highway, in peopling the west and increasing its productive power, can hardly be subjected to computation.—Some estimate of the effect of this emigration on the trade of the Erie Canal, may be made from the increase of tolls and tonnage at its western termination. The sum paid for toll at Buffalo and Black Rock, including the contributions from Erie and Chataque counties, for the first three years after the canal was navigable, averaged \$32,823 99, for each year. The average for the last three years, is \$1,034,674, for each year. The quantity of tonnage coming from states and territories west of Buffalo, has increased from nothing in 1825, to 36,273 tons in 1836, and 396,512 in 1846, to 535,086 tons in 1849, exclusive of 233,583 tons coming from the Western States and Canada, in the latter year, by way of Oswego. In twenty-three years, a trade has grown up between New York and the western country, which brought to the Erie and Oswego Canals, in the navigation season of 1849, 768,669 tons of products, valued at \$26,713,796.

The success of the Erie Canal, in attracting the trade of the west, and in accumulating revenue, has been unprecedented. Its great natural rivals, the Mississippi and the St. Lawrence, with all the improvements which have been made in their navigation by steamboats, locks and otherwise, have not, to any considerable extent, diverted the trade from any portion of the region around the lakes, which in the original estimates was counted on to seek a market through the Erie Canal—while every new channel of transportation communicating within the basin of the great lakes, has had the effect of increasing its tonnage and its revenue.

When the state of Ohio, in 1832, completed a canal of 309 miles, extending from Cleveland, at the mouth of the Cuyahoga, to the Ohio river; and when subsequently the Pennsylvania and Ohio Canal was made, connecting Pittsburg with the first named canal at Akron, [the latter route being 300 miles less to Philadelphia than to New York, and open six weeks earlier] it was anticipated that a large portion of the products of Ohio would be diverted from the Erie Canal, and pass down to New Orleans, or through the Pennsylvania improvements to Philadelphia. These anticipations may have been partially realized, but not to such an extent as to have made any impression on the Erie Canal. It is only necessary to refer to the transportation of wheat and flour, to show the effect of the Ohio Canal on the trade of Lake Erie. Of the wheat and flour transported on the Ohio Canal for six years preceding 1843, Cleveland, on Lake Erie, received of wheat, 8,325,022 bushels; Portsmouth, on the Ohio river, 4,193 bushels; Cleveland received of flour, 2,199,542 barrels; Portsmouth, 149,645 barrels. Calling five bushels of wheat equal to a barrel of flour, and the comparison will show 3,864,546 barrels of flour brought to the lake, against 150,483 taken to the Ohio river. In the year 1847, there arrived at Cleveland, on the Ohio Canal, 187,601 tons of products, and at Portsmouth 27,054 tons; of wheat and flour, there came to Cleveland 89,886 tons, and to the Ohio river, at Portsmouth, 4,426 tons. The proportion of wheat and flour is as 20 to 1.

At the same time, the opening of the Ohio and Pennsylvania Canals to Lake Erie has brought to its shores the iron manufactures of Pittsburg, and sugar, molasses, coffee, and some other kinds of merchandise from New Orleans, which before came from New York. The Canal Board, in July, 1845, reduced the toll on all these articles from 18 to 10 mills on a ton per mile, going from tide water. These reductions were made as much because it was considered just and expedient to discriminate between the rates on heavy and light merchandise, as to counteract, if practicable, the effects of this competition with the trade of New York.

Since the opening of the Ohio Canals, the extension of the Indiana Canal to the grain growing valley of the Wabash, and the connection of Lake Michigan with the Illinois river, the contributions to the Erie Canal, in the products of the forest and of agriculture, have been vastly increased. The single article of corn, brought from other states by

way of Buffalo, Black Rock, and Oswego, has increased from 33,000 bushels in 1845, to 3,581,674 bushels in 1849.

The improvements in the navigation of the St. Lawrence have been perfected, and afford the most ample facilities to the navigation of that river.—And yet, instead of drawing the western trade to Montreal, the people of Upper Canada are availing themselves of drawback laws, enacted by the Congress of the United States in 1845 and 1846, to pass through our canals with merchandise imported in original packages by way of New York, or from Canada to be exported from the Atlantic ports, and Congress has been applied to in their behalf for such a modification of the tariff as will enable them to make New York the port for the shipment of their produce, as well as for the entry and export of their merchandise. Thus using the New York canals instead of the St. Lawrence and its improvements.

All these facts lead to the conclusion that the route of the Erie Canal possesses some peculiar advantage over all the rival routes, natural and artificial, from the lakes to the Atlantic. The state of Pennsylvania, at a cost double that of the Erie Canal, completed her main line of improvements to Pittsburg, connecting at that point with the trade of the valley of the Ohio for 800 miles, by steamboat navigation, and with Lake Erie at Toledo, Cleveland, and Erie, by canal boats, and yet the tolls paid, and the tonnage cleared on the canal at Pittsburg, falls far below the canal business at Buffalo. Philadelphia is several hundred miles nearer the centre of Ohio than New York, yet the wheat, and flour, and corn, all heavy products, take the circuitous route to market. Why is this? Is it not because the Erie Canal furnishes the easiest, the safest, and in all respects, the best route to market?

The natural formation of the route occupied by the Erie Canal, gives it a controlling advantage over all the projects for connecting the Atlantic ports east of the Alleghany Mountains, with the waters west of them. In estimating the advantages and disadvantages of the several routes, more prominence has usually been given to the length of the route, than to the elevations to be overcome.—Sufficient weight has not been given to the facts, that while the routes of Pennsylvania, Maryland, and Virginia, cross the Alleghany Mountains at an average rise and fall of more than 2,500 feet; on the route of the Hudson river, nature has broken through this formidable barrier, and brought it down to the level of the tides of the Atlantic. And the residue of the New York route, from the head of tide at Troy to Buffalo, is more favorable by 1,500 feet rise and fall, than the Pennsylvania route, excluding the portage over the mountains.

This peculiar formation was noticed by Mr. Colles, in his publication in 1785. He says:—"The Alleghany Mountains, which pass through all the states, seem to die away as they approach the Mohawk."

The Edinburgh Encyclopedia, vol. xviii., p. 261, in alluding to the valley of the Mohawk, says:—"The Mohawk carries a chasm in the continent, rising in no place to 426 feet above mid tide level in the Hudson. The table land between the Mohawk and the Oneida Lake is the lowest depression in the Appalachian system, and at right angles to its chains, from the southwestern termination of the system to the St. Lawrence, near the confluence of that great stream and the Ottawas. To this, the still deeper depression of the Hudson and Lake Champlain route is no exception, as the latter extends evidently along, and not at right angles to the mountain vallies."

Gen. Peter B. Porter, in a very elaborate and able speech in Congress in 1810, on the subject of an appropriation of lands for internal improvements, thus alludes to the advantages of the New York route:—"The Alleghany Mountains have a uniform elevation of about 3,000 feet above the level of the tide. Their bases, together with those of their parallel ridges, occupy a distance, transversely, of about 100 miles. The only practicable route for an ascending navigation to the lakes, is by the way of the Hudson and the Mohawk, in the State of New York; the Hudson being the only river whose tide waters flow above the Blue Ridge or eastern chain of mountains. The Mohawk rises in the level lands of the western country, takes an

easterly direction for about 140 miles, where it passes around the northern extremity of the western chain of the Alleghany Mountains, and falls into the Hudson. From thence, the two rivers united, take a southerly course, and breaking through the eastern chain of mountains, commonly called the Blue Ridge, at West Point, fall into the Atlantic at New York."—*Merchants' Mag.*

To be continued.

#### THE LOCOMOTIVE STEAM ENGINE.

"I love," says Elihu Burritt, "to see one of those huge creatures, with sinews of brass, and muscles iron, stut forth from his smoky stable, and saluting the long train of cars with a dozen sonorous puffs from his iron nostrils, fall back gently into his harness. There he stands, champing and foaming upon the iron track, his great heart a furnace of glowing coals; his lymphatic blood is boiling in his veins; the strength of a thousand horses is nerving his sinews; he pants to be gone. He would drag St. Peters across the desert of Sahara, if he could be carefully hitched to it; but there is a little sober-eyed, tobacco-chewing man in the saddle, who holds him in with one finger, and can take away his breath in a moment, should he grow restive and vicious. I am always deeply interested in this man, for, begrimed as he may be with machinery, he is the physical mind of that huge steam horse."

#### ON THE CLEANSING OF METAL CASTINGS.

In the old process of cleansing metal castings from the coating of oxide and sand with which they are covered when taken from the mould, the work is thrown into water acidulated with sulphuric or hydrochloric acid, which acts upon the surface of the metal, and more or less completely removes the covering of foreign matter. The acid, however, leaves the surface rough and unequal, and it is generally necessary, after its action, to have recourse to mechanical means to effectually take away the oxide. Some time since, M. Sorel had remarked, that the cleansing of castings was more completely effected by the acidulated water produced in certain processes employed in the depuration of oils, and left as refuse, than by a mere mixture of acid and water; and, according to the experiments of M. M. Thomas and Delisse, the oxide and sand are removed from cast surfaces with great certainty and facility, if, to the water acidulated with sulphuric acid, organic matter such as glycerine, artificial tannin, naphthaline, creosote or stearine be added. The acid liquor, thus prepared, does not dissolve the coating of oxide, but causes it to become detached and scale off without sensibly attacking the surface of the metal beneath; there is no disengagement of hydrogen gas, as when common dilute acid is employed, even when the immersion of the metal in the bath is continued for a very considerable time; and the surface, after the operation, is uniform, quite clean and smooth.

In practice, it is found that, by the employment of the mixture described, 60 per cent. of acid is saved, and not one half as much metal lost as in the old process. The new method is also peculiarly applicable to the cleansing of works in zinc and brass. It may be remarked, in passing, that if the mixture of water, acid, and organic matter be employed as the exciting fluid in a cell of Bunsen's galvanic battery, the consumption of the zinc will be diminished to one eighth the ordinary quantity, without in anywise enfeebling the energy of the electric current.

The substances mentioned above as being employed, in addition to the acid liquor, in the experiments of M. M. Thomas and Delisse, being somewhat difficult to procure under some circumstances, particularly by persons engaged in ordinary industrial occupations, M. Elsner entered upon a series of trials, in order to ascertain whether or not organic matters of a cheaper class, and more easily procurable, could not be substituted for those already tried with so much success. With this object, both wood and coal tar were mixed with the dilute acid. As these substances contain creosote and other products of the destructive distillation of organic bodies, the useful effect of which had been proved by the previous experimenters, it was believed that they would advantageously replace the rarer and more expensive materials first tried.—

The mixture of tar and dilute acid was, in fact, found to answer perfectly well the objects of the experiment; a piece of casting, in iron, was immersed in the mixture—the metal was completely cleansed of the coating of oxide without any disengagement of hydrogen gas; and the surface was of a clear greyish black color, quite clean and smooth, and totally unattacked by the acid. A similar piece of casting, immersed in the kind of acid solution ordinarily used in this process, was almost wholly dissolved in an equal time. The practical value of this process seems to be so considerable as to render it worthy of being generally known and tested by more extended trials.—*Mining Journal*.

#### Illinois.

**Galena and Chicago Union Railroad.**—As will be seen by an advertisement in another column, the Galena and Chicago Union railroad has declared a dividend of eight per cent on the stock for the six months ending the 31st day of October. The dividends are to be paid on the 10th day of December next, one half in stock dividend certificates and one half in cash. The certificates are redeemable in full paid shares of stock in the first division of the road when presented at the railroad office, in sums of one hundred dollars. Those stockholders who have paid but 75 cents on the dollar, will have the demand on them met by the dividend of \$3 each on each share, while those who have paid 78 cents or over, will get their dividends in cash.

This dividend of 8 per cent speaks well for the prosperity of the road, and establishes beyond doubt the fact that as a permanent investment for capitalists the road cannot be excelled.—*Chicago Democrat*.

#### Missouri.

**Railroad Iron.**—The steamer Grand Turk landed at our wharf on Friday last, with a large quantity of rails and other iron intended for the St. Clair railroad. This, we believe, is the first arrival for that work, and we learn that a very large amount of iron, machinery, etc., is expected at New Orleans for the same enterprise in a few days.—*St. Louis Intel.*

#### Virginia.

**Seaboard and Roanoke Railroad.**—Two new advertisements will be found in this number of our paper over the signature of the Engineer of the Seaboard and Roanoke railroad. One of these is for sills and the other for bridge timber. We learn that about 15 miles of the road are laid with T iron and that Capt. Barnes and Mr. Pratt have put a number of hands at work on this end of the road about Boykins or Margarettsville. One gentleman from this place has been employed, and left here on Monday morning last to commence operations below Margarettsville. Goods are already leaving Portsmouth on the cars for merchants at and beyond Suffolk, and things do really look like the road is coming on rapidly. Captain Barnes, who is very much of a gentleman and an accomplished engineer, thinks the road will be completed to this place by the 1st of April or May.—*Weldon Herald*.

#### Lake Superior Items.

We gather from the Journal the following items:

On the 19th ult. the schooner Ocean, of Detroit, that has been several years running on Lake Superior, run over the Ste. Maria Falls. It was a grand spectacle. The whole length of the rapids was run in four minutes. This is the second vessel that has gone over this season.

A correspondent writing from Ontonagon, says of the companies there at work: "The Minnesota is the pioneer of successful mining in the Ontonagon district; for the extent of ground opened, it has been extraordinarily productive. Had their stamp works been in operation in the early part of the summer, their shipments would have reached about 40 tons this season. This mine was first opened in the fall of 1848, and commenced with

about twenty people, who were accommodated with one log cabin; now they have a population of 170 people, and with the buildings for mining accommodation, which, together with stamp and saw mill, give the appearance of a respectable village. Their mining work is progressing rapidly. Four shafts are being sunk; one is now at the depth of 140 feet. The first level is being extended so that by spring it will be opened 900 feet long. The second level is now about 500 feet. The produce of the mines, and the stamp work on hand, must pay a handsome dividend to the company next season."

#### Wisconsin.

**Fon Du Lac Railroad.**—Mr. E. F. Johnson, a distinguished engineer, who has been extensively employed in this State in making surveys, etc., passed through this city a few days ago, on his way to Wisconsin, to take charge of the Fon du Lac railroad, just about to be commenced. It is to run to Fon du Lac, on Lake Winnebago, to some point on the Chicago and Galena railroad, not yet determined upon. There is no doubt that the road will be built at an early day, a company of eastern capitalists having furnished the necessary funds. The Chicago Democrat says it is evident that the line will be a profitable one, from the nature of the country through which it passes, comprising the richest portion of the State of Wisconsin. The railroad will unite the lumber regions of northern Wisconsin with the State of Illinois, at the same time that it passes through the finest manufacturing region in the west. It will pour into the Galena and Chicago railroad line an immense amount of traffic, and will furnish the entire State of Wisconsin with a market for its produce, and a means of obtaining in return the products of other regions and the manufactures of the east.—*Buffalo Express*.

#### Ohio.

**Central Railroad.**—That portion of the Central railroad from two miles east of Newark to the city of Columbus has just been put under contract.

The foregoing, in connection with the work already in progress, comprises the entire line from Zanesville to Columbus. It is intended to push the work with energy till completed.

#### Connecticut.

The New Haven Journal of Tuesday says, in regard to the New London railroad: We are pleased to learn that the subscription to the work of this important enterprise is such as to insure confidence that it will soon be put under contract.

#### SUBMARINE TELEGRAPH FROM DOVER TO CALAIS.

The very general interest which has attached to the successful results of the experiments here, during the last week, induces us to give to the public, through your columns, the earliest intimation that the telegraph communication between the two countries is temporarily suspended, in consequence, upon examination, of an injury sustained by the wire on some sunken rocks off Cape Grinez. This circumstance, however, is of the less importance, inasmuch as some weeks must otherwise have necessarily elapsed before the communication between London and Paris would have been rendered complete, without which the line would be practically of little use, whilst the experience which has been gained of the nature of the coasts, and the obstacles to be contended with will conduce, in repairing the present injury, to the avoidance of a similar catastrophe, and the selection of a safe route for the six permanent wires. The practicability of printing communication from coast to coast in a moment of time, having been established beyond a possibility of a doubt, there is no ground for discouragement, and the difficulty now met with (by no means unexpected) will only stimulate to additional exertions, and secure the full completion of an enterprise—the first effect of which must be to

unite in bonds of common interest the two most powerful nations of the world.—*Min. Jour.*

#### Louisiana.

##### New Railroad Project.

TO THE EDITOR OF THE R. R. JOURNAL:

Sir—Under the provisions of an act of the Legislature of this State, approved March 15th, 1850, authorising the formation of a company to construct a railroad from the Mississippi river to some convenient terminus on Grand river, an act of incorporation has just been completed for that purpose. The proposed termini of this road are a point on the Mississippi just above the town of Donaldsonville, where an excellent landing for all class steamers can be had at all stages of the river, and the other on Grand river about 13 miles below Lake Natchez. The length of the road will be about 204 miles, passing through a thickly settled portion of the State, and certainly one of the richest, in point of agricultural resources, in the south. But the great object for the construction of this road is to afford the citizens of the Attakapas parish, and the parishes of Opelousa, which embrace the largest portion of our sugar district, an easy, safe and cheap communication at all seasons. They are now, and have at the periods of the year which they require communication to New Orleans, been in a measure pent up, without, I may say, any outlet—the navigation being in low stages long, tedious and expensive; besides being attended with considerable danger. This road will remove all these objections, as it will shorten the distance to the city 80 or 100 miles in high water, and nearly 300 in low water. The enterprise presents so many advantages, in point of location, being through its whole length one level track. No excavations required, and the only embankments being for a short distance, only 2 to 3 feet, two or three small bridges required on the route. The freights over the road will consist of sugar and molasses, [of which 42,000 hhd of the former and 55,000 bbls. of the latter were manufactured last year in the Attakapas parishes alone,] cotton, moss, lumber, pickets, staves for barrels and hogsheads, of which immense quantities are sold on the river, shingles, boards, fruits, game, fish, machinery for sugar houses, merchandise, hay, corn, wool, cattle, of which large quantities are brought to the New Orleans market from this section of the country. This road cannot fail to be one of the most productive in the whole country. When you compare the cheapness of building the road, and the vast amount of business that will be done on the route, you cannot doubt the astonishing results in favor of the project. Subscription books will be opened on the first of November in New Orleans, by George C. Lawrason, Jas. Benner and Geo. Hall; in Donaldson by A. J. Powell and Andy Gurgry; in Attakapas, by Judge Moore and F. D. Richardson. The capital stock is fixed at \$200,000, which sum I feel confident will construct the road, including switches, turn outs, depots, etc.

Donaldsonville, La., Oct. 29, 1850.

#### Indiana.

From the Newcastle, Ind., Courier we learn that the amount necessary to organize the Richmond and Newcastle railroad, \$100,000, has been subscribed, and that an election for directors was held on the 2d November.

**Evansville Railroad.**—We are gratified to learn that the subscription to this road is already swelled to an amount sufficient to warrant the completion of the work to Vincennes.



**Banks in Maine.**

Abstract of the situation of the banks in Maine, on the first of October last:

Capital stock paid in	\$3,248,000 00
Bills in circulation	2,654,208 00
Net profits on hand	171,944 64
Balances due other banks	48,006 91
Cash deposited, &c., not bearing interest	\$1,223,671 77
Cash deposited bearing interest	38,285 57
<b>Total amount due from the banks</b>	<b>\$7,353,116 84</b>
Gold, Silver, &c., in banks	475,589 24
Real estate	111,905 20
Bills of banks in this state	92,298 15
Bills of banks elsewhere	95,137 77
Balances due from other banks	778,955 81
Due to the banks, excepting balances	5,830,230 72
<b>Total amount of resources of the bks.</b>	<b>\$7,384,116 89</b>

**Georgia.**

Comparative statement of the earnings of the Georgia railroad in the month of October, 1849 and 1850; also, during the seven months ending 31st Oct. 1849 and 1850:

	Passengers.	Freight, mail &c.
1850	\$21,327 40	\$55,359 45
1849	16,998 74	55,472 84
<b>Increase</b>	<b>\$4,328 66</b>	<b>Dec. \$113 39</b>
<i>April 1st to Nov. 1st.</i>		
	Passengers.	Freight, mail &c.
1850	\$136,617 94	\$216,252 73
1849	99,882 89	187,795 67
<b>Increase</b>	<b>\$36,735 05</b>	<b>\$28,457 06</b>

**The Philadelphia Coal Trade.**

The Philadelphia Ledger of the 19th says:

The anthracite coal trade was never, probably, more prosperous than now. Prices are weekly rising, and but for the increased activity of trade on the Reading railroad, the public interest in the coal trade would be heightened by the prospect of having to pay ten dollars per ton before the close of the coming winter. As it is, from six to seven dollars per ton is not improbable. The Lehigh Navigation company has given notice that it has already taken as many orders as it will probably be able to fill before the close of navigation, and though the Reading railroad is bringing down weekly 50,000 tons, the demand prevents any surplus stock at Port Richmond. The colliers have, we understand, put up the price at the mines; and, in consequence, the coal dealers of this city held a meeting on Monday evening, and put up the price to \$5 25 per ton for all sizes of Schuylkill coal, except nut coal, which is fixed at \$5. Lehigh coal is retailing here at \$5 45 per ton, it being preferred by most persons at the advance over the Schuylkill coal. The advance of price is caused by the serious damage by freshet to the Schuylkill and Lehigh Navigation companies, interrupting navigation on the Lehigh for more than a month, and on the Schuylkill for nearly half the season. How high a price the New York and more eastern consumers of coal will have to pay before the winter is over, is not now easy to limit.

**Kentucky.**

**Lexington and Frankfort Railroad.**—The receipts of this road for the six months ending Nov. 1 were \$29,720 38; expenses during the same period, \$14,551 30; total number of miles run, 25,620; gross receipts per mile run, \$1 16; expenses per mile run, 59 cents; net receipts per mile run, 59 cents.

We copy the following from the communication of the President of the company, W. A. Dudley, Esq., to the directors in relation to the earnings and operations of the road:

With a view to a correct appreciation of the result, it should be observed that during the last seven weeks included in the statement the navigation of the Kentucky river has been suspended on ac-

count of low water. The regular communication between Lexington and the Ohio river being thus cut off, the freights over the road during the months of September and October, [in ordinary seasons two of our busiest months] were exceedingly light, and the receipts of the company were thereby diminished several thousand dollars, without any corresponding diminution of our expenses. The completion of the Louisville and Frankfort railroad during the next summer will effectually guard us against the like interruptions in future. The prevalence of the cholera in different sections of the state during the months of July and August also exerted a most depressing influence on our business.

The City Council of Louisville has authorized the vote of the people on the question of subscribing \$500,000 on the railroad to Nashville, \$300,000 to Jeffersonville and Columbia railroad, \$100,000 to the Lexington and Maysville railroad. It has also appropriated \$100,000 for the completion of the Frankfort railroad.

**Maryland.**

**Baltimore and Ohio Railroad.**—At the regularly monthly meeting of the directors of the Baltimore and Ohio railroad, held this morning, Thomas Swann, Esq., was unanimously re-elected President of the company. This unanimous vote of the directors, in which Mr. Swann's administration of the affairs of the company is formally approved, is a compliment which has been well earned, and which the public sentiment, by an equally unanimous vote endorses.

The present prosperous condition of the affairs of the road, as far as it is completed, and the gratifying prospects which are before us, for its early extension to the Ohio river, are conclusive evidence of the wisdom of his administration, and the zeal and ability with which it was carried out by the officers of the company.

We publish below the monthly return of the business done on the road in the last month. It is another gratifying evidence of continued prosperity.

A large portion of the bonds of \$500,000, which were recently offered by the company, have been taken at from 95 per cent to par; and it will be seen by the advertisement of the secretary, that those remaining on hand will be disposed of at 95 per cent. No safer and no more profitable investment than these bonds can be found any where.

**Business of the Road.**—The following are memoranda of the business upon the Baltimore and Ohio railroad, for the month of October, 1850:

	For passengers.	For freight.
Main stem	\$37,542 10	\$97,325 03
Washington branch	23,734 77	4,662 33
	<b>\$61,276 87</b>	<b>\$101,987 36</b>

Making an aggregate of \$134,867 13 on the main stem, and \$28,397 10 on the Washington branch—the total being \$163,264 23.

The above shows an increase over the corresponding month of last year of \$12,693 11, being \$8,905 92 on the main stem, and \$3,787 19 on the Washington branch.—*Patriot.*

**Massachusetts.**

A meeting was recently held at New London, for the purpose of ascertaining the feasibility of a railroad from Palmer, along the valley of the Ware river, to South Gardner or to Winchendon. A road has been completed from New London to Palmer, 66 miles; and it was suggested, at the meeting, that if continued it would form a direct route from the north, even from Concord, N. H. to New York by the way of Palmer and New London. Such a road would undoubtedly be of great service to the

towns through which it would pass, and form an important through route.

**Worcester and Nashua Railroad.**—The net profits of the Worcester and Nashua railroad for the year 1849 were \$42,119 19, which the directors applied to the payment of debts. The total income of the road for 1849 was \$108,125 64. Their business this year shows an increase to October 1st of \$23,491 27 over the corresponding period of last year. The total income of the year to December 1st can fall little, if any, short of \$150,000. A dividend of 24 per cent will be made for the six months ending on 1st December next.

**Bank Capital in Massachusetts.**

The Bankers' Magazine for the present month, just published, gives a statement of the increase of bank capital in this state since Feb., 1849. This increase consists in part of enlarged capital of 16 banks previously existing, of which five are in this city, and eleven in the country, to the amount in all of \$1,434,989, and the establishment of ten new banks, of which three are in Boston and seven in the country, with an aggregate capital of \$2,100,000. The whole increase of capital amounts to \$3,534,989; and the present aggregate capital is \$38,165,000. The capital of the new banks in Boston is \$1,400,000, making a total in the new and old banks of \$21,760,000. In the new country banks \$700,000, total capital of country banks \$16,405,000. The Magazine gives in detail the names and increased capital of each of the banks. The amount of bank tax for the last six months is \$179,600, and for the year the amount will be \$359,200.—*Boston Adv.*

**Michigan Southern Railroad.**

The South Bend Register communicates the following interesting intelligence as to the progress of this road:

A general meeting of the board of directors of the Southern Michigan and Northern Indiana railroad companies, assembled at the town of Elkhart on the 22d ult. There were present George Bliss, Esq., (president of both companies,) Elisha C. Litchfield and Charles Noble, of the Southern Michigan; Dr. H. Beardsley, Wm. C. Hanna, Jas. Bradley, Thos. S. Stanfield and Ezekiel Morrison, Esqrs., of the Northern Indiana. Much business of importance, we learn, was transacted at this meeting. The board having settled the question that Bristol, Elkhart, Mishawaka, South Bend and Laporte, should be points on the main line of the road, a resolution was adopted "that the road from Toledo to Laporte should be completed, and the cars running on the whole line by the first day of January, 1852." We also learn that arrangements are being made to complete the road through to Chicago in the same time.

Proposals are advertised for ties for the road from the Michigan State line to Laporte, the grading and bridging to be let as soon as the next first of February, and a portion probably sooner.

**Ohio and Pennsylvania Railroad.**

The Pittsburgh Gazette, speaking of the Ohio and Pennsylvania railroad, says—

It gives us pleasure to state, that the condition of this great Pittsburgh work is of the most satisfactory character. All along the line the work is progressing as fast as was anticipated, and gives assurances that the road will be ready for the cars as soon as was contemplated. Three ships have been chartered to deliver the iron in New Orleans, and the manufacturer of the American contract promises to be up to time. The president of the company, Gen. Wm. Robinson, Jr., has contracted for seven express locomotives. Three are to be built in Boston, and four in Philadelphia. Arrangements are also making for the construction of a sufficient number of very superior first-class passenger cars. These locomotives and cars are to be paid for in the bonds of the company, at a very fair price; and bonds have also been negotiated for the supply of all the additional funds needed to finish and stock the road. All the chairs and spikes for laying down the rails have also been contracted for; the

chains to be of wrought iron. In fact, all the necessary arrangements have been made to finish and stock the road from this city to Wooster, and to make it in every respect equal to any railroad in the country. The line beyond Wooster to the western terminus will be put under contract as soon as the citizens of Ashland and Richland counties take a sufficient amount of stock to justify the directors in taking such action.

## AMERICAN RAILROAD JOURNAL.

Saturday, November 16, 1850.

### Notice to Contractors.

**ATLANTIC & ST. LAWRENCE RAILROAD.**  
PROPOSALS will be received by the subscribers, at Leary Tavern, in the town of Gorham, New Hampshire, until the 30th of November, for the Grading and Masonry of that portion of the Atlantic and St. Lawrence Railroad extending from Peabody's River in said Gorham, to the Connecticut River, a distance of about 30 miles.

Plans and profiles will be in readiness for examination after the 20th inst., at the Engineer's office at Gorham, N. H.

This line embraces some heavy work, and Contractors of means and experience will find this notice worthy of their attention.

Spirituuous liquors will not be allowed on or about the work; nor will the propositions of Contractors be considered, who have heretofore failed to pay the laborers employed, on this, or any other public work.

Cash payments will be made monthly, reserving ten per cent. until the final completion of the contract.

WOOD, BLACK & CO.  
Portland, Nov. 5, 1850.

### General Railroad Laws.

The people of every State in the Union would think it a very absurd thing, if they were compelled in all cases to apply to their Legislatures for the privilege of constructing a road for ordinary travel; both from the inconvenience of the thing, and for the still stronger reason that they themselves are much more competent to decide upon their wants, than those who know nothing about them. But as roads must be made, and as the making of them involves the necessity of taking land against the wish perhaps of the party from whom it is taken, Legislative authority is necessary for this; and this authority is given in a general law, applicable to all cases; those seeking the construction of a road being deemed the best judges of their own interests, and are consequently allowed to decide upon the direction, cost, mode of construction, etc., etc. Such is the course of policy which long experience has shown as best calculated to promote the interest of the community in reference to common roads. If it is applicable to these, it is to railroads in as much greater degree as the latter are superior to the former in cost, in usefulness and in results, and require for their successful management the more free and untrammelled exercise of private judgment.

These are common sense rules as far as construction is concerned. They become the more important from the fact, that so long as distinct charters are granted for each particular case, those who obtain the first, regard themselves as possessing certain vested rights, which will be infringed by a second charter; or that their interests will be prejudiced by it. The first grantee, therefore, always arrays himself against the second claimant, and when a large number of charters are granted, and large interests are at stake, it often happens that those possessing them can by concert control the Legislature of a State, and refuse altogether to others the privileges they enjoy. The rights of a majority may thus be defeated by the wealth and

concert of a minority, and monopolies may be perpetuated by the influence which the very monopoly may be able to exert.

Another very important reason for general railroad laws, is the refusal of some States to grant the right of way to certain lines, for fear that they will divert trade and travel for the benefit of others.

Now the greatest good of the greatest number in every State, is promoted by the most perfect freedom in the transit both of travellers and merchandise. If the navigation of the Mississippi should be broken by a rapid, the great mass would suffer, though it might essentially benefit those who enjoyed the privilege of carrying by such rapid. What they received would be just so much of a tax upon the whole community. So with every interruption to a line of railroad. The inconvenience which the public might suffer, might to a certain extent benefit a few; but where an advantage is based upon injury to others, this advantage is the exact measure of the absolute loss to the whole. Restriction therefore is positive evil. In addition to this reason, no State has a right to impose burdens upon the citizens of other States passing through it. It is equally against good faith, as well as positive law. The wants of our people, as a whole, should, if we may use the term, project themselves in lines of railroads, following the natural direction of trade and travel. The right to construct should be as free as the ability to conceive them.

Another argument in favor of free railroading is the healthy influence it is sure to exert upon the progress of these works. When men are left entirely free to act, they will not generally act without reason. They will not inconsiderately be forced into the commencement of works, for the purpose of saving a charter, nor from the influence of passion, or an excitement into which they may have been wrought in the contests for a charter. Many lines in this country have been unwisely commenced from these causes, which would never have been touched if men had been left free to act.

Another very important reason in favor of general laws upon this subject, is the expenses of obtaining a special act, and this expense increases just in proportion to the number granted. It encounters the opposition of all before it; and can only combat this opposition by the use of similar means—money; thus of necessity involving more or less corruption in almost every case. In England \$10,000 a mile is considered in no way extravagant for Parliamentary expenses of a line—a sum sufficient to build a road with us. It is the enormous expenses like the above, to which English railroads have been subject, that such vast losses have been experienced there; an example which we may and should avoid.

Such are some of the reasons in favor of general railroad laws by every State. We have in practice a good many illustrations of their necessity. Look at the Baltimore and Ohio railroad, and see how much the symmetry of that line is impaired, and its value diminished, by being compelled to go through Wheeling. Here is a heavy tax imposed upon every passenger and every pound of merchandise transported over the road for the benefit of that city alone. The people of Erie, in Pennsylvania, if they had the power, would prevent the extension of the New York and Erie through that State, and thus completely sever the magnificent line of railroad of which that road is to constitute a part. So long as the right to build railroads depends upon the special legislation of each State, it will often happen that the caprice or selfishness of a few men

will control and defeat popular rights. The best way to remedy this evil, is to concede to the people the right to construct works of internal improvement whenever and wherever they wish to build them.

### Maine.

The Kennebec and Penobscot railroad company is to be organized at Bangor on the 27th inst. The distance from the two rivers by line of the road will be about 50 miles.

By reference to an Advertisement in our paper of to-day, it will be seen that the Atlantic and St. Lawrence railroad is to be put under contract to the Connecticut river immediately.

### Vermont.

The Vermont and Canada railroad is running as far as St. Albans, and will be in operation soon for its whole length. The completion of this link, it is expected, will add largely to the business of the Vermont roads and the Ogdensburg.

The Vermont Legislature will undoubtedly authorize the bridging of the lake at Rouse's Point. Should the Legislature of this State grant the same privilege to the Northern railroad company, of which we should hope there is no doubt, both New York and Boston will enjoy uninterrupted railroad communication with Ogdensburg; a matter of as much importance to this city as to Boston.

There is no State in the Union, in which, in proportion to its territory and population, so many miles of railroad have been built in the same space of time, as in Vermont; and none, whose people, like hers, are devoted almost exclusively to agricultural pursuits, enjoy such facilities of railroad communication. She has two lines of railroads running nearly parallel north and south through the State, two running diagonally through it east and west. In addition to these, the Atlantic and St. Lawrence will for some distance skirt her eastern border, and the Troy and Whitehall, and Troy and Rutland, her western. Other roads are projected, but without such, her people have no reason to complain of the want of suitable means to get to a market.

### Continuous Railroad Iron.

Messrs. E. Pratt & Brothers have exhibited in the lower room of the fair at Washington Hall, a specimen of the continuous railroad iron manufactured at the Mount Savage Iron Company's Works, near Cumberland, Md. The rail does not differ in form essentially from the usual T rail, but it is divided into two sections longitudinally, and a continuous rail is thus obtained by breaking the joints. This, it will be readily perceived, is an important improvement, entirely obviating the liability to give way at the joints, which is experienced in the use of other patterns of rail. The Utica and Schenectady railroad company, in New York, after thoroughly testing the rail by twelve months' trial, have contracted for the supply of 1000 tons of it, the larger portion of which has already been sent forward. With this rail a greater speed may be obtained over the road, with equal safety and less wear and tear to the road and cars, and it will no doubt soon recommend itself to general use.—*Baltimore American.*

### Portland and Halifax Railroad.

The Hon. Joseph Howe, Provincial Secretary of Nova Scotia, has been appointed by the N. S. government to proceed to England, to endeavor to prevail upon the English government to extend to the province the aid required for the construction of



**Michigan.**

**New York.**

## Railroads in the West.

## Pennsylvania.

## Georgia.

Indiana.

### South Carolina.

Philadelphia, November 14, 1850.

**Curious Substitute for Coal Cars.**

The Pottsville Mining Register states that Mr Lawrence Myers has taken out a patent for a substitute for coal cars, the practicability of which will be shortly tested on the Reading railroad. "It consists," says that paper, "simply of a cylinder somewhat smaller than the wheel, of which it will form the axle. The wheels it is proposed to make 54 inches in diameter, while the cylinder will be 42 inches, so as to elevate it sufficiently above the grade of the road to avoid its coming in contact with stones or other obstructions. Each cylinder of this size will contain two tons of coal, so that two cylinders requiring four wheels will hold just the same as the cars now used. The cylinder and wheel are, of course, permanently attached together, and its contents will revolve with it, the rapid motion preventing any friction of the coal. The new form possesses many supposed advantages, not the least of which is, that each locomotive will be able to carry at least double the quantity of coal than by the present method. Two or more cylinders can be attached together by a wooden framework outside of the wheels, which will be necessary to couple these 'Revolvers' into a train."

**New York.**

The Wayne Sentinel states that the line of the direct railroad through Palmyra village, as originally surveyed by Mr. Childs, has been substantially adopted by Mr. Taylor, the engineer having charge of that division of the road. The entire line is now nearly located and established through Syracuse to Rochester, and it is expected that the same will shortly be in readiness for grading.

**Ohio.**

**Cincinnati and Belpre Railroad.**—Mr. Kennedy, the Engineer, employed by the Belpre company, has proceeded to Hillsborough, to commence preparing the line from Hillsborough to Chillicothe, for immediate letting to contractors. If energetic measures are taken, the cars will run through from Cincinnati to Chillicothe in less than a year. We have no doubt such will be the fact.—*Cin. Atlas.*

**SLAVE LABOR IN COTTON FACTORIES.**

We had the gratification recently of visiting a factory, situated on the Saluda river, near Columbia, S. C., and of inspecting its operations. It is on the slave labor, or anti-free soil system—no operators in the establishment but blacks. The superintendent and overseers are white, and of great experience in manufacturing. They are principally from the manufacturing districts of the north and though strongly prejudiced, on their first arrival at the establishment, against African labor, from observation and more experience, they all testify to their equal efficiency, and great superiority, in many respects. So as not act precipitately, the experiment of African labor was first tested in the spinning department. Since which, the older spinners have been transferred to the weaving room. They commenced in that department on the 1st of July, and are now turning out as many yards to the loom as was performed under the older system. A weaver from Lowell has charge of this department; and she reports that, while there is full as much work done by the blacks, they are much more attentive to the condition of their looms. They all appear pleased with the manipulations on which they are employed, and are thus affording to the south the best evidence, that when the channels of agriculture are choked, the manufacturing of our own productions will open new channels of profitable employment for our slaves. The resources of the south are great; and it should be gratifying to all who view these facts with an eye of a statesman and philanthropist, that the sources of profitable employment and support to our rapidly increasing African labor, are illimitable, and must remove all motives for emigration to other countries. By an enlightened system of internal improvements, making all parts of the state accessi-

ble, and by a judicious distribution of our labor, South Carolina may more than double her productive slave labor, and not suffer from too dense a population.—*Charleston Mercury.*

**Notice to Contractors.**

**PROPOSALS** will be received at the offices of the Baltimore and Ohio Railroad Company, at Baltimore, Cumberland, Fairmount and Wheeling, until SATURDAY, the 24th of November next inclusive, for the Graduation and Masonry of about 33 sections or miles of the line, extending westwardly by the waters of Fish Creek and Grave Creek, and over the dividing ridges between them, from the 160th section of the part of the line already let, to the 204th section of the same line—being the only portion of the route remaining to be put under contract.

The work to be let will be generally heavy—including a tunnel of 2450, another of 1250, and a third of 400 feet in length, a number of deep cuttings and embankments, and a considerable quantity of Bridge Masonry. Specifications will be ready at the above offices, on or after the first day of November, and Engineers will be upon the line to give information.

No bid unsupported by good testimonials will be considered, and bidders are desired to state if they have other work on hand, and when it will be finished. The most energetic prosecution of the work will be expected.

By order of the Board of Directors.

BENJ. H. LATROBE,  
Chief Engineer.

**To Contractors.**

ENGINEER'S OFFICE TROY & BOSTON R.R., }  
Troy, November 5, 1850. }

**PROPOSALS** will be received by the subscriber until November 20th, 1850, for the Grading, Masonry and Fencing of the unoccupied sections of the Troy and Boston Railroad—between Hoosick Falls and Troy—viz: sections 3, 4, 5, 6, 7, 8, 10, 14, 17, averaging one mile each.

Plans and specifications may be seen on application at this office.

S. F. JOHNSON,  
Chief Engineer.

**Rochester Scale Works.**

ESTABLISHED IN 1841.

**THE** Subscribers are manufacturing and prepared to furnish upon order all kinds of Scales, such as Canal Weigh Lock Scales, from 100 to 400 tons capacity.

Railroad Track and Depot Scales,  
Cattle, Coal, and Hay Scales,  
Dormant and Wheat or Hopper Scales,  
Portable Platform, and Counter Scales,  
Sugar Crushers, Letter Presses,  
Warehouse Trucks, Wheat Cars, etc., etc.

Our long experience in the business, and the facilities we have for manufacturing, enables us to supply all orders promptly. Every article made of the best material and warranted.

**REFERENCES:**

J. W. Brooks, Supt. Michigan Central R.R., Mich.  
Benj. Loder, Prest. N. Y. & Erie R.R., New York.  
Charles Minot, Supt. do. do. do.  
The Hon. Board of Canal Commissioners and Engineers of Erie Canal Enlargement.  
E. F. Osborn, Supt. Mad River & Lake Erie R.R., O.  
Sam'l Brown, Chief Clerk Freight Department New York & Erie R.R., New York.  
John Wilkinson, Prest. Utica & Syracuse R.R., N.Y.  
John B. Turner, Supt. Galena & Chicago R.R., Ill.  
M. Sloat, Supt. N. Y. & Harlem R.R., N.Y.  
Carlos Dutton, Supt. Roch. & Syracuse R.R., N.Y.  
Henry Martin, Prest. Buffalo & Attica R.R., N.Y.  
John Crockford, Agent Patterson & Hudson River R.R., New Jersey.  
D. C. McCallum, Supt. Bridges & Buildings N. Y. & Erie R.R., N.Y.  
B. Higgins, formerly Supt. Mansfield & Sandusky City R.R., Ohio.  
A. H. Barber, Agent Mansfield and Sandusky City R.R., Ohio.  
Charles Butler, Prest. Board of Trustees Wabash & Erie Canal, Indiana.  
Jesse L. Williams, Chief Engineer Wabash & Erie Canal, Indiana.

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No. 15 Water St., Rochester, N.Y.  
General Depot and Scale Warehouse,  
No. 205 Pearl St., New York.

**Great Work on Bridge Building, etc., etc.**

**JUST** published in medium folio, One Dollar, 75 cts. to subscribers.

Part II of a "THEORETICAL AND PRACTICAL TREATISE ON THE CONSTRUCTION OF BRIDGES IN STONE, IRON AND WOOD," including the Equilibrium of Arches, the mathematical principles of the Oblique Arch, Suspension Arch, etc., Construction of Foundations in Water, Centering, Oblique Arches, etc., the application of Iron to Railroad Structures, Practical Tunnelling, Suspension Bridges, etc.; illustrated by numerous accurately executed Plans, Elevations, Sections and Details of Stone, Iron and Wood Bridges, Viaducts, Tunnels, Culverts, Machines, etc., constructed by the most eminent Architects and Engineers in Europe and the United States, and numerous Original Designs for Bridges, Viaducts, Culverts, etc. The whole calculated to meet the exigencies of Engineers, and assist Draughtsmen, Bridge Builders, Mechanics and Students. By George Duggan, Architect and Civil Engineer.

The present part contains beautifully executed plans, elevations, sections, and details of the Cast Iron Oblique Arch, 100 feet span, constructed on the system of M. Polonceau, over the Canal St. Denis, Gt. Northern R.R. of France, also plans, elevations, sections and details of a Timber and Iron Truss, 74 feet span, from St. Mary's Viaduct, Cheltenham and Great Western R.R., England, and a Wrought Iron Girder Bridge, 120 feet span, constructed for the London and Blackwall R.R., with the conclusion of the introductory article on the relative merits of the various forms of construction adopted, and materials employed, as regards economy, strength and durability.

Published by George Duggan, 300 Broadway, New York, to whom all communications should be addressed and subscriptions forwarded.

Parties remitting Mr. Duggan \$5. and the remainder \$4 when they have been supplied with the first six parts of the "Theoretical and Practical Treatise on Bridge Building, etc." shall receive it monthly as published. To those making Mr. Duggan a present remittance of \$9, the work will be forwarded post free to any part of the United States.

**NOTICE**

**For Proposals for Railroad Iron, for the Alabama and Tennessee River Railroad,**

TO BE MANUFACTURED FROM ALABAMA ORE.

**THE** Alabama and Tennessee River Railroad Co. invite proposals, until the 1st of January, 1851, for Iron Rails, to be made of Alabama Iron, for the Northern Division and part of the Southern Division of their road, embracing a distance of about 105 miles. The rails are to be of the H pattern, in lengths of 18 feet, and weighing 63 lbs. per lineal yard. They are to be delivered on the Coosa river, at a landing to be hereafter designated, between Kimulgee ferry and Fort Williams, commencing their delivery on the 1st of November, 1851, and continuing it at the rate of from 80 to 100 tons per week, until the whole quantity required (10,500 tons) shall have been delivered. They are to be inspected by Lewis Troost, Chief Engineer.

It is proper to state to iron masters and capitalists at a distance, that the country traversed by the Northern and part of the Southern divisions of the road abounds in excellent iron ore and bituminous coal, and possesses every advantage for the successful manufacture of iron, health, cheap labor and provisions.

Further information may be obtained by addressing the President of the Company at Selma, Ala.

By order of the Board of Directors.

J. W. LAPSLEY, President.

**Emerson's Patent Ventilator,**

**ADAPTED** to Cars, Engine houses, Public Halls, Factories, Churches, School Houses, Dwellings, Chimney Flues, etc.



This Ventilator is stationary, and cannot get out of order. It is constructed in such conformity to cert. in ascertained laws of pneumatics, as to insure a constant draft outward, whatever may be the changing direction of the wind. The Massachusetts Mechanic Association have awarded a gold medal to the inventor, and the Manufacturers have already disposed of over 3,000 of the article. Manufactured and sold by **CHILSON, ALLEN, WALKER & Co.,** 351 Broadway, New York.



**Great American Engineering**

**AND MECHANICAL WORK**, just published in a medium folio One Dollar, 75 cts. to Subscribers. Part VIII of "Specimens of the Stone, Iron & Wood Bridges, Viaducts, Tunnels, Culverts, &c., &c., of the United States Railroads." By George Duggan, Architect and Civil Engineer.

The present part contains beautifully executed plans, elevations, sections and isometrical views of the fine Timber Bridge, two arches, 150 feet span, across the Patapasco River, on the line of the Baltimore and Ohio R.R. Also Plans, Elevations and Sections of the Viaduct under the Erie Canal at Lodi, and Culverts of 4 feet chord on the line of the Utica and Syracuse R.R., with the Specifications, Estimates, form of Contract, etc., for the Hartford and N. Haven R.R. Extension.

Published by **GEORGE DUGGAN**,  
300 Broadway, New York.

To whom all communications should be addressed, and subscriptions forwarded.

**Providence Tool Co.,**

MANUFACTURERS OF

Plane Irons, Tooth Irons, Soft Moulding and Rabbet Irons, Cornice Irons, Plow Bits, and Planing Machine Knives:

**NUTS, WASHERS AND BOLTS.**

—ALSO—

**PLATE HINGES AND PICK AXES.**

They are prepared to execute orders for all descriptions of Cold Punching and Job Work.

Wm. Field, Agent. **RUFUS WATERMAN, Treas.**  
**PROVIDENCE, R. I.**

**Ibbotson, Brothers & Co's  
CELEBRATED CAST STEEL**

AND

Best Cast Steel Royal Improved Files, well known as better adapted for Engineers' and Machinists' purposes than any now in use in the United States.

Every description of Square, Octagon, Flat and Round Cast Steel, Sheet, Shovel and Railway Spring Steel, etc., and Steel to order for any purposes—manufactured at their works in Sheffield—and universally known by the old stamp "Globe."

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218 Pearl st., New York.

**Faggotted Car and Engine  
Axles**

**FORGED** by **RANSTEAD, DEARBORN & Co.,**  
Boston, Mass.

These Axles enjoy the highest reputation for excellence, and are all warranted.

**American Cast Steel.**

**THE ADIRONDAC STEEL MANUFACTURING CO.** is now producing, from American iron, at their works at Jersey City, N.J., Cast Steel of extraordinary quality, and is prepared to supply orders for the same at prices below that of the imported article of like quality. Consumers will find it to their interest to give this a trial. Orders for all sizes of hammered cast steel, directed as above, will meet with prompt attention.  
May 28, 1849.

**GRAHAM'S COMPOSITION,  
to Remove and Prevent  
Incrustation (or Scale) in  
STEAM BOILERS.**

**THIS** valuable composition having been fully and extensively tested, is now offered to the public, as a sure remedy and preventive for incrustations in steam boilers of all descriptions. By its use, all scale is entirely removed from the boilers of Ocean and River Steamers, Locomotive and Stationary Engines, in from 3 to 20 running days, according to the size of the boiler and thickness of the scale. In New Boilers, all incrustation is prevented at a trifling expense.

The preservation of the boiler, great economy of fuel and labor, safety, and increased speed, are among the advantages to be derived from the use of this composition.

Orders should state the quality of water used, viz: "Salt," "Fresh," or "Brackish."

For sale, with directions for use, by

**W. H. NEWMAN,**  
75 Pearl street,  
New York.

**TESTIMONIALS.**

New York, August 17, 1850.

We have used Graham's Composition in the boilers of the Steamship Southerner, during several voyages between this place and Charleston. The boilers were old and very foul with scale, a very large quantity of which was removed by the use of the composition, and no new scale was formed.

From our own experience and observation in the use of the article, we are fully satisfied that it will effectually remove the incrustation made by sea water, and also that it will effectually prevent its formation.

We are also satisfied that the use of it will be attended with a great saving of fuel, and that it has no injurious effect upon iron.

**DAVID N. MAXON, Engineer,**  
**BERRY, Master,**  
Steamship Southerner.

Steamship Philadelphia, }

New York, August 27, 1850.

I have used "Graham's Composition for Steam Boilers," in the boilers of Steamship Philadelphia, on the voyage to and from Chagres, and am entirely satisfied that it will remove, dissolve and prevent all scale or incrustation in salt water boilers.

For the preservation of the boiler and economy of fuel and labor, I hereby recommend the employment of this composition in the Boilers of Ocean Steamers

**WM. BISBY,**  
Chief Engineer.

Novelty Iron Works, }

New York, July 5, 1850.

We have examined the specimen of Graham's Composition for preventing incrustation of steam boilers, and we believe it may be used with perfect safety in reasonable quantities for the purpose intended, as there does not appear to be any agent in the composition calculated to injure the iron.

**STILLMAN, ALLEN & CO.**

Piermont, May 20, 1850.

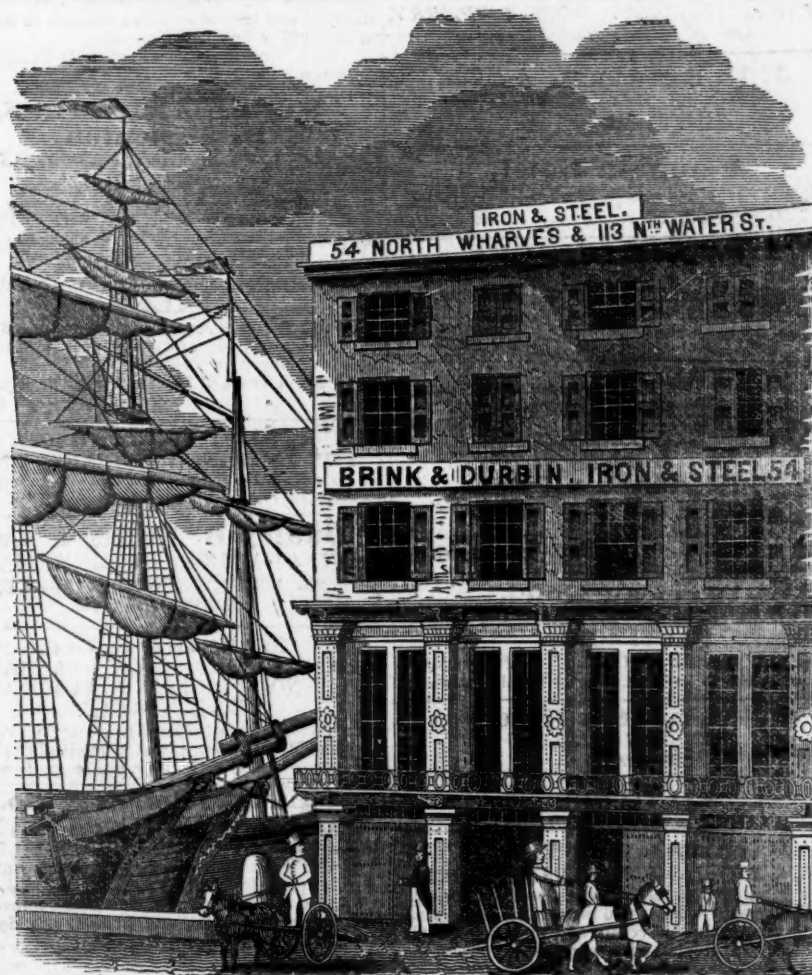
I have used "Graham's Composition," and find it to produce the intended effect; and I hereby, without hesitation, recommend it for Stationary, Marine and Locomotive Engine Boilers.

**JOHN BRANDT,**  
Superintendent Motive Power  
New York & Erie R.R.

New York, July 25, 1850.

In answer to many inquiries as to the practical effect of "Graham's Composition," I will state that I have used it in the boiler of the Steamboat Sunwick, which had become considerably incrustated with hard scale from both salt and fresh water. We used 10 lbs. per day, for three days, without blowing off the water, until the fifth day, when all was drawn off. To our astonishment, we found the whole interior of the boiler as clear of scale and smooth as when it came from the hands of the maker. The following week, we tried the same quantity in a small steam tow boat. The boiler had old scale of long accumulation and very thick. We ran the boat three days without blowing off, and on the fourth day washed out the boiler and found it, like the "Sunwick's," perfectly clean and smooth as when new. I am therefore enabled to state that the use of the composition in these two instances under my own immediate observation and direction, has been attended with complete success.

**JAMES MORROW,**  
Engineer Astoria Ferry.

**To Merchants, Railroad Companies, Machinists and Boiler  
Makers.**

**THE** subscribers beg leave to call attention to their very large stock of Iron and Steel—of American, English, Swede and Norway make—of all the different kinds in use. Also, Railroad Iron, Ship, Boat and Railroad Spikes. They are also Agents for the Best Pennsylvania Locomotive Boiler and Tank Iron, each sheet of which will be stamped and warranted, at lowest mill prices. Our prices for all kinds of iron will be found very low, either for cash or approved credit.

**BRINK & DURBIN, Philadelphia.**

**ENGINEERS.**

**Atkinson, T. C.,**  
Alexandria and Orange Railroad, Alexandria, Va.

**Bancks, C. W.,**  
Civil Engineer, Vicksburg, Miss.

**Buckland, George,**  
Troy and Greenbush Railroad.

**Clement, Wm. H.,**  
Little Miami Railroad, Cincinnati, Ohio.

**Cozzens, W. H.,**  
Engineer and Surveyor, St. Louis, Mo.

**Alfred W. Craven,**  
Chief Engineer Croton Aqueduct, New York.

**Davidson, M. O.,**  
Eckhart Mines, Alleghany Co., Maryland.

**Fisk, Charles B.,**  
Cumberland and Ohio Canal, Washington, D. C.

**Felton, S. M.,**  
Fitchburgh Railroad, Boston, Mass.

**Floyd-Jones, Charles,**  
South Oyster Bay, L. I.

**Gzowski, Mr.,**  
St. Lawrence & Atlantic Railroad, Montreal, Canada.

**Gilbert, Wm. B.,**  
Rutland and Burlington Railroad, Rutland, Vt.

**Grant, James H.,**  
Nashville and Chattanooga R. R., Nashville, Tenn.

**S. W. Hill,**  
Mining Engineer and Surveyor, Eagle River,  
Lake Superior.

**Holcomb, F. P.**  
Southwestern Railroad, Macon, Ga.

**Johnson, Edwin F.**  
New York and Boston Railroad, Middletown Ct.

**Latrobe, B. H.,**  
Baltimore and Ohio Railroad, Baltimore, Md.

**Miller, J. F.,**  
Worcester and Nashua Railroad, Worcester, Mass.

**Morris, Elwood,**  
Schuylkill Navigation, Schuylkill Haven, Pa.

**Morton, A. C.,**  
Atlantic and St. Lawrence Railroad, Portland, Me.

**McRae, John,**  
South Carolina Railroad, Charleston, S. C.

**Nott, Samuel,**  
Lawrence and Manchester Railroad, Boston,

**Prichard, M. B.,**  
East Tennessee and Georgia R. R., Cleveland, Tenn.

**Roebbling, John A.,**  
Trenton, N. J.

**W. Milnor Roberts,**  
Bellefontaine and Indiana Railroad, Marion, Ohio.

**Roberts, Solomon W.,**  
Ohio and Pennsylvania Railroad, Pittsburgh, Pa.

**Sanford, C. O.,**  
South Side Railroad, Virginia.

**Schlatter, Charles L.,**  
Northern Railroad (Ogdensburg), Malone, N. Y.

**Sours, Peter,**  
Rahway, New Jersey.

**Stark, George.,**  
Bost., Con. and Mont. R. R., Meredith Bridge, N. H. **Bairds & West, . . . . . Proprietors.**

**Steele, J. Dutton,**  
Pottstown, Pa.

**Trautwine, John C.,**  
Panama Railroad—Address through office of Panama  
Railroad Co., 78 Broadway, N. Y.

**Trimble, Isaac R.,**  
Philad., Wil. & Baltimore Railroad, Wilmington, Del.

**Tinkham, A. W.,**  
United States Fort, Bucksport, Me.

**Thomson, J. Edgar.,**  
Pennsylvania (Central) Railroad, Philadelphia.

**Troost, Lewis,**  
Alabama and Tennessee Railroad, Selma, Ala.

**Whipple, S.,**  
Civil Engineer and Bridge Builder, Utica, N. Y.

**Williams, E. P.,**  
Auburn and Schenectady Railroad, Auburn, N. Y.

**Williams, Charles H.,**  
Milwaukee, Wisconsin.

**HOTELS.**

**Exchange Hotel,**  
Adjoining Eastern Railroad Depot,  
BUFFALO, N. Y.  
BY..... **FISK & SPERRY,**  
Late of Delevan House, Albany.

**J. D. Abraham, Architect,**  
NO. 300 MAIN STREET,  
BUFFALO, N. Y.

**Fountain Hotel,**  
LIGHT STREET, BALTIMORE,  
P. THURSTON..... *Proprietor.*

**DUNLAP'S HOTEL,**  
On the European Plan,  
NO. 135 FULTON STREET,  
Between Broadway and Nassau St.,  
NEW YORK.

**MANSSION,**  
Corner of Maine and Exchange Streets,  
P. DORSHIMER. **BUFFALO.**

**GUY'S**  
**United States Hotel,**  
(Opposite Pratt street Railroad Depot.)  
BALTIMORE.  
**JOHN GUY. WILLIAM GUY.**

**American Hotel,**  
Pratt street, opposite the Railroad Depot,  
BALTIMORE.  
**HENRY M. SMITH..... Proprietor.**  
Lat. of the Exchange & St. Charles Hotels, Pittsburg.

**Washington Hotel,**  
BY **JOHN GILMAN,**  
\$1 Per Day.  
No. 206 Pratt street, (near the Depot.)  
BALTIMORE.

**Barnum's City Hotel,**  
**MONUMENT SQUARE, BALTIMORE.**  
This Extensive Establishment, erected expressly  
for a Hotel, with every regard to comfort and convenience, is situated in the centre and most fashionable  
part of the city, and but a few minutes' walk from the  
Railroad Depots and Steamboat Landings.  
The House has lately undergone a thorough repair,  
embracing many valuable improvements, and will accommodate 250 Guests. **BARNUM & CO.**

**JONES' HOTEL,**  
NO. 152 CHESTNUT STREET,  
PHILADELPHIA.

**BUSINESS CARDS.****Lithography.**

**JOHN P. HALL & CO.,**  
161 Main st., Buffalo, (Commercial Advertiser Build.)  
Are prepared to execute all kinds of Lithography  
in good style and at reasonable rates. Particular  
attention will be paid to Engraving Railroad Maps, Engineer's Plans and drafts, etc., and orders in this line  
are respectfully solicited.

**J. T. Hodge**

Will attend to the examination of mining tracts near  
Lake Superior, and prepare Reports and Maps.  
Address, during the Summer,  
Ontonagon Postoffice, Lake Superior.

**Cumberland Steam Coal,**

FROM THE  
**FROSTBURG MINES, MD.**

**H. A. TUCKER,**  
Agent of Frostburg Coal Co.  
No. 50 Wall Street, New York.

**Eaton, Gilbert & Co.,**  
Railroad Car, Coach and Omnibus Builders,  
TROY, N. Y.

**Charles T. Jackson, M. D.,**  
STATE ASSAYER, late Geologist to Maine, Rhode  
Island, New Hampshire, and the United States,  
offers his services to his friends and the public in making  
any Chemical, Mineralogical or Geological re-  
searches that may be required for the improvement of  
Agriculture and the Manufacturing Arts. Particular  
attention will be paid to the exploration of mines and  
to assaying of ores of the metals.  
State Assayer's office, 31 Somerset st.  
Boston Sept. 3, 1850.

**STEEL AND FILES.**

**R. S. Stenton,**  
20 CLIFF STREET, NEW YORK,  
AGENT FOR  
**J. & RILEY CARR,**  
BAILEY-LANE WORKS, SHEFFIELD,  
Manufacturers of Cast, Shear, German, Blister, and  
**Spring Steel,**  
Of all descriptions, Warranted Good.  
**FILES.**

Manufacturers of Machinists' Warranted Best Cast  
Steel Files, expressly for working upon Iron and Steel,  
made very heavy for recutting.  
A full Stock of Steel and Files at all times on  
hand. 6m4

**Walter R. Johnson,**  
CIVIL AND MINING ENGINEER AND AT-  
torney for Patents. Office and Laboratory, F St.,  
opposite the Patent office, Washington, D. C.

**Dudley B. Fuller & Co.,**  
IRON COMMISSION MERCHANTS,  
No. 139 GREENWICH STREET,  
NEW YORK.

**Manning & Lee,**  
GENERAL COMMISSION MERCHANTS,  
NO. 51 EXCHANGE PLACE,  
BALTIMORE.

Agents for Avalon Railroad Iron and Nail Works.  
Maryland Mining Company's Cumberland Coal 'CED'  
—'Potomac' and other good brands of Pig Iron.

**Samuel Kimber & Co.,**  
**COMMISSION MERCHANTS**  
WILLOW ST. WHARVES, PHILADELPHIA.  
AGENTS for the sale of Charcoal and Anthracite  
Pig Iron, Hammered Railroad Car and Locomo-  
tive Axles, Force Pumps of the most approved con-  
struction for Railroad Water Stations and Hydraulic  
Rams, etc., etc.  
July, 27, 1849.

**James Herron, Civil Engineer,**  
OF THE UNITED STATES NAVY YARD,  
PENSACOLA, FLORIDA.,  
PATENTEE OF THE  
**HERRON RAILWAY TRACK.**  
Models of this Track, on the most improved plans,  
may be seen at the Engineer's office of the New York  
and Erie Railroad.



**PLUSHES**

FOR

**Railway Cars & Omnibuses.****F. S. & S. A. MARTINE,**  
112 WILLIAM ST., NEAR JOHN.

ARE now receiving a large and complete assortment of Plain and Figured PLUSHES, of their own importation, which will be sold at the lowest market price, viz: Crimson, Maroon, Scarlet, Green, Blue, Purple, etc.

ALSO—CURLED HAIR, the best manufactured in market.

**To Railroad Companies, Machinists, Car Manufacturers, etc., etc.****CHARLES T. GILBERT,**  
NO. 80 BROAD ST., NEW YORK.

IS prepared to contract for furnishing at manufacturer's prices—  
Railroad iron,

Locomotive Engines,  
Passenger and Freight Cars,  
Car Wheels and Axles,  
Chairs and Spikes.

Orders are invited; and all inquiries in relation to any of the above articles will receive immediate attention.

**Manufacture of Patent Wire ROPE AND CABLES,**

For Inclined Planes, Suspension Bridges, Standing Rigging, Mines, Cranes, Derrick, Tilters, &c., by  
**JOHN A. ROEBLING, Civil Engineer,**  
**TRENTON, N. J.**

**FORGING.****Ranstead, Dearborn & Co.,**

MANUFACTURERS OF

LOCOMOTIVE CRANKS AND CAR AXLES,

ALSO

**WROUGHT IRON SHAFTING,**

And All Kinds of Hammered Shapes.

Office 25 Foster's Wharf, Boston.

**Henry I. Ibbotson,**

IMPORTER of Sheffield and Birmingham Goods.  
Also, Agent for the Manufacture of Telegraph Wire.  
218 PEARL ST., NEW YORK.

**Cumberland, (Md.) Coals for Steaming, etc.**

ORDERS RECEIVED FOR AND FILLED  
by  
**J. COWLES, 27 Wall St., N. Y.**

**Samuel D. Willmott,**

MERCHANT, AND MANUFACTURER OF  
**CAST STEEL WARRANTED SAWS,**

—AND FILES—

IMPORTER OF THE  
**GENUINE WICKESLY GRINDSTONES**  
NO. 8 LIBERTY STREET,  
NEW YORK.

**Railroad Instruments.**

**THEODOLITES, TRANSIT COMPASSES,**  
and Levels, with Fraunhoffer's Munich Glasses,  
Surveyor's Compasses, Chains, Drawing Instruments,  
Barometers, etc., all of the best quality and  
workmanship, for sale at unusually low prices, by  
**E. & G. W. BLUNT,**

No. 179 Water St., cor. Burling Slip.  
New York, May 19, 1849.

**IRON.****Stickney & Beatty,**  
DEALERS IN IRON AND IRON  
MANUFACTURERS.

AGENTS for the Balt. City Rolling Mill, from which establishment they are prepared to furnish Elliptical round, square, and flat bar iron, puddled and charcoal boiler plates and billet iron—also agents for the sale of the Laurel, Gunpowder and Locust Grove (Balt.) forge pig irons, Locust Grove and Laurel Irons for car wheels, Caledonian boiler blooms made from cold blast iron, Old Colony and anti-Eatam nails, Wm. Jessop & Son's steel, Coleman's blister steel and nail rods, sheet, hoop, band, oval and common English iron.

Nos. 18 and 20 South Charles st., Baltimore.

**Car Wheel Iron.**

100 Tons "Columbia" No. 2 Cold Blast Charcoal Iron.

300 Tons "Salisbury" No. 1, do. do.  
For sale by **CHARLES T. GILBERT,**  
No. 80 Broad st.

New York, Sept. 21, 1850.

**Railroad Spikes.**

THE subscribers are prepared to make and execute contracts for Railroad Spikes of a superior quality, manufactured by the New Jersey Iron Company, at Boonton.  
**DUDLEY B. FULLER & CO.,**  
139 Greenwich st. corner of Cedar.

**Railroad Iron.**

1650 Tons, weighing about 61 lbs. per yard, 40 tons, weighing about 52 lbs. per yard, and 825 tons, weighing about 53½ lbs. per yard, of the latest and most approved patterns of T rail, for sale by  
**BOORMAN, JOHNSTON & CO.,**  
119 Greenwich street.

New York, Aug. 26, 1850.

N.B.—B. J. & Co are also prepared to take contracts for English rails, delivered in any of the Atlantic ports of the United States.

**Railroad Iron.**

THE Undersigned, Agents for Manufacturers, are prepared to contract to deliver Rails of superior quality, and of any size or pattern, to any ports of discharge in the United States.

**COLLINS, VOSE & CO.,**  
74 South St.

New York, June 1, 1850.

**Railroad Iron.**

1,500 Tons weighing 53 lbs. per lineal yard.

500 " " 57 " "

500 " " 56 " "

500 " " 60 & 61 lbs, "

Also 2½x½ flat rails. All the above being of approved patterns. For sale by

**DAVIS, BROOKS, & CO.,**  
68 Broad street.

N.B.—Rails imported on commission, or at a fixed price.

**Iron.**

Pig Iron, Anthracite and Charcoal; Boiler and Flue Iron, Spring and Blistered Steel, Nail Rods, Best Refined Bar Iron, Railroad Iron, Car Axles, Nails, Stove Castings, Cast Iron Pipes of all sizes, Railway Chairs of approved patterns for sale by

**COLEMAN, KELTON & CAMPBELL,**  
109 N. Water St., Philadelphia.

**Railroad Iron.**

THE UNDERSIGNED, HAVING made arrangements abroad, are prepared to contract for the delivery of Foreign rails, of approved brands upon the most favorable terms.

They will also make contracts for American rails, made at their Trenton works, from Andover Iron, in whole or in part, as may be agreed upon.

They are prepared to furnish Telegraph, Spring and Market Wire; Braziers and Wire Rods; Rivets and Merchant Bars to order, all made exclusively from Andover Iron. The attention of parties who require iron of the very best quality for special purposes, is respectfully invited.

**COOPER & HEWITT,**  
17 Burling Slip, New York.

February 15, 1850.

**Railroad Iron.**

THE Undersigned, Agents for Manufacturers, are prepared to contract for the delivery of English, Welsh and Scotch Rails, of any pattern and weight, also for every description of English, Welsh, Scotch, and Swedish Iron, Railway Chairs and Spikes, Rivets, Bolts, Nuts, Washers, Chain Cables, Anchors, Tin Plates, German Spelter, Iron Castings, and every description of Machinery.

**WILLIAM BIRD & CO.,**  
Iron and Tin Plate Merchants,  
44 Wall st., New York.

And at 5 Martin's Lane, City, London,  
and 140 Buchanan st., Glasgow.

July 27th, 1850.

**Railroad Iron.**

THE Undersigned are prepared to contract for the delivery of superior make Welsh Railroad Iron of the favorite brand "Aberdare."

**JOSEPH BRAMWELL & CO.,**  
91 Wall street.

40

**Glendon Refined Iron.**

Round Iron, Band Iron, Hoop Iron,  
Square " Flat " Scroll "

Axles, Locomotive Tyres,

Manufactured at the Glendon Mills, East Boston, for sale by  
**GEORGE GARDNER & CO.,**  
5 Liberty Square, Boston, Mass.

Sept. 15, 1849.

3m37

**PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES.**—The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for railroads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.

**JOHN F. WINSLOW, Agent.**

Albany Iron and Nail Works, Troy, N. Y.

The above Spikes may be had at factory prices, of Erastus Corning & Co Albany; Merrill & Co., New York; E. Pratt & Br. & Co. Baltimore Md

**LAP—WELDED  
WROUGHT IRON TUBES**

FOR

**TUBULAR BOILERS,**

FROM ONE AND A QUARTER TO SEVEN  
INCHES IN DIAMETER.

THE ONLY Tubes of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

**THOMAS PROSSER & SON, Patentees,**  
23 Platt street, New York.

**Railroad Iron.**

THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron.

**THOMAS B. SANDS & CO.,**

73 New street,  
New York.

February 3, 1849.

**Iron Store.**

THE Subscribers, having the selling agency of the following named Rolling Mills, viz: Norristown, Rough and Ready, Kensington, Triadelphia, Pottsgrove and Thorndale, can supply Railroad Companies, Merchants and others, at the wholesale mill prices for bars of all sizes, sheets cut to order as large as 58 in. diameter; Railroad Iron, domestic and foreign; Locomotive tire welded to given size; Chairs and Spikes; Iron for shafting, locomotive and general machinery purposes; Cast, Shear, Blister and Spring Steel; Boiler rivets; Copper; Pig iron, etc., etc.

**MORRIS, JONES & CO.,**

Iron Merchants,

Schuylkill 7th and Market Sts., Philadelphia.

August 16, 1849.

1y33

**Railroad Iron.**

THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention. **J. F. WINSLOW, President**

Troy, N. Y.

**ERASTUS CORNING, Albany**

**WARREN DELANO, Jr., N. Y.**

**JOHN M. FORBES, Boston.**

**ENOCH PRATT, Baltimore, Md**

November 6, 1848.

**Railroad Iron.**

THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phoenix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehanna river; which two establishments are now turning out upwards of 1800 tons of finished rails per month.

Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.

**REEVES, BUCK & CO.**

45 North Water St. Philadelphia;

March 15, 1849.

**Tredegar Iron Works.**

**ROLLING MILL FOUNDRY AND MACHINE SHOPS.** The undersigned continues to manufacture at his Works in this city (from best charcoal metal) Bar Iron of every description, embracing—**Rounds and Squares**, from  $\frac{1}{4}$  to 5 inches diameter. **Plats**, from  $\frac{1}{4}$  to 7 inches, all thicknesses. **Bands and Scrolls**, all sizes. **Boiler plate and Plough Iron**. **Railroad and Locomotive Axles and Tires**. **Locomotive Frames, Spikes and Plates**. **Hoops, Ovals, Half Ovals, Half Rounds, Angle, T, L**, and indeed every description of Iron usually manufactured, all of which he warrants to be equal to any made in this country. He also manufactures at his Foundry and Machine Shops all descriptions of Railroad Work, say, **Locomotives, Railroad Wheels and Axles complete and ready for the road, Railroad Chairs, etc.** Also, **Marine and Stationary Engines** all sizes, **Sugar mills and Engines**, **Horse mills**, and every kind of Machinery usually required for the operations of the country. He has paid particular attention to getting up machinery, etc., for **Gold Mine operations**, and those in want of such work might find it to their advantage to give him a call. **J. R. ANDERSON.**  
Richmond, Va., Sept. 10, 1850.

**CUT NAILS OF BEST QUALITY, BAR IRON** (including Flat Rails) manufactured and for sale by **FISHER, MORGAN & CO.**  
75 N. Water St., Philadelphia.

**Wheel, Forge and Foundry Iron.**

**LOCUST GROVE** Wheel Iron of great strength and superior chilling property. **Balt. Charcoal Forge Iron**, from Patuxent, Curtis Creek and Gunpowder furnaces. **Elkridge Foundry Iron**, of superior strength and softness. **Anthracite and Charcoal Iron** from Pennsylvania and Virginia. **Gas and Water Pipes, Lamp Posts** from Elkridge furnace.

**LEMMON & GLENN,**  
6m9 62 Buchanan's Wharf, Baltimore.

**S. S. Keyser & Co., IRON WAREHOUSE,**

Corner of South and Pratt Streets, BALTIMORE, MD.  
Selling Agents for the Rough and Ready Bar Iron and Elk Boiler and Flue Iron Rolling Mills, Sarah and Taylor Furnaces, and Wrightsville Hollow Ware Foundry, and Dealers in Bar and Sheet Iron, and Cast, Sheer, German, Blister, Spring and Electroplated Steel, etc., etc.

**Smith & Tyson,**

**GENERAL COMMISSION MERCHANTS,**  
No. 25 South Charles St., Baltimore, Md.  
**AGENTS** for the Celebrated Columbia Pig Iron, suitable for Car Wheels and Chilled Rolls. **Columbia refined Charcoal Blooms**; **Refined Charcoal Juniatta Billet Iron** for Wire; **Refined Iron for Bridging**, of great strength; **Cut Nails, Spikes, and Brads**; **Railroad Spikes and Wrought Chairs.** 22tf

**Railroad Iron.**

**CONTRACTS** made by the subscribers, agents for the manufacturers, for the delivery of **Railway Iron**, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on the oldest railways in this country.  
**RAYMOND & FULLERTON, 45 Cliff St.**

**JOHNSON, CAMMELL & Co's Celebrated Cast Steel,**

**AND ENGINEERING AND MACHINE FILES,** which for quality and adaptation to mechanical uses, have been proved superior to any in the United States. Every description of square, octagon, flat and round cast steel, sheet, shovel and railway spring steel, best double and single shear steel, German steel, flat and square, goat stamps, etc. Saw and file steel, and steel to order for any purposes, manufactured at their Cyclops Steel Works Sheffield.

**JOHNSON, CAMMELL & CO.,**  
100 William St., New York.

November 23 1849.

**Bowling Tire Bars.**

40 Best Flange Bars  $5\frac{1}{2} \times 2$  inches, 11 feet long.  
40 " "  $5\frac{1}{2} \times 2$  " 7 feet 8 in. long.  
40 " Flat "  $6 \times 2$  " 11 feet long.  
40 " "  $6 \times 2$  " 7 feet 8 in. long.  
Now in store and for sale by  
**RAYMOND & FULLERTON,**  
45 Cliff street.

**IRONDALE PIG METAL, MANUFACTURED** and for sale by the **Bloomsburg Railroad Iron Co.**  
**LINDLEY FISHER, Treasurer.**  
75 N. Water St., Philadelphia.

**Railroad Iron.**

**2000** Tons, weighing 58 pounds per lineal yard, of the most approved pattern of T rails, in store and to arrive, for sale by  
**COLLINS, VOSE & CO.**  
74 South St.

New York, June 1, 1850.

**Railroad Iron.**

**3,000** TONS C. L. MAKE 63 $\frac{1}{2}$  lbs. per yard, now landing and to arrive.  
Also contracts made for future delivery of above superior make English Iron.  
**300** Tons Banks Best Iron, Round, Square and Flat.  
**200** " English Bar " " " "  
**10** " 9-16 Square Iron for Railroad Spikes.  
For sale in lots to suit purchasers by  
**DAVID W. WETMORE.**  
New York, March 26, 1850. 3m

**WILLIAM JESSOP & SONS' CELEBRATED CAST-STEEL**

The subscribers have on hand, and are constantly receiving from their manufactory, **PARK WORKS, SHEFFIELD,** Double Refined Cast Steel—square, flat and octagon. Best warranted Cast Steel—square, flat and octagon. Best double and single Shear Steel—warranted. Machinery Steel—round. Best and 2d gy. Sheet Steel—for saws and other purposes. German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps. Genuine "Sykes," L. Blister Steel. Best English Blister Steel, etc., etc., etc. All of which are offered for sale on the most favorable terms by  
**WM. JESSOP & SONS,**  
91 John street, New York.

Also by their Agents—  
**Curtis & Hand,** 47 Commerce street, Philadelphia.  
**Alex'r Fullerton & Co.,** 119 Milk street, Boston.  
**Stickney & Beatty,** South Charles street, Baltimore.  
May 6, 1848.

**Railroad Iron.**

**B. O. Railway Tires,** Railway Wheels,  
**Scotch Pig Iron,** Tin Plates and Banca Tin,  
**Muntz Patent Metal Sheathing,**  
**Baltimore Copper.**

Contracts for Rails made on behalf of the manufacturers, for delivery at any ports in the United States, at fixed prices.

**Bowling Tires and Tire Bars and Scotch Pigs** imported to order.  
**Muntz's Ship-sheathing, and a general stock of Tin Plates and Banca Tin** in store, and for sale by  
**RAYMOND & FULLERTON, 45 Cliff St.**

**Bowling Iron. Stamped B.O.**

**Railway Tire Bars** Rivet Iron  
**Locomotive and other Axles** Locomotive Frame do  
**Boiler Plates** Bars,  
and every other description of this superior Iron.

The subscribers, agents for the sale of **Bowling Iron**, are prepared to execute orders for importation, especially for railway and machinery uses, with despatch from the manufacturers.

**RAYMOND & FULLERTON, 45 Cliff St.**

**Lovegrove's Patent Cast Iron Water and Gas Pipes.**

**THE** Subscriber, the Inventor and Patentee of the Centrifugal mode of giving form to metallic substances while in a molten state, is preparing to make **Cast Iron Water and Gas Pipes**, of any dimensions, at prices much lower than they can be made in the old manner, and the pipes warranted to stand a pressure of three hundred pounds to the square inch, and to be soft enough to drill. **Steam Engines** and all kinds of machinery. **Cast Iron Doors and Frames, and Mill Castings** of every description, made to order.

**THOMAS J. LOVEGROVE,**  
Machinist and Founder,  
West Falls Avenue, below Pratt St., Baltimore.

**Railroad Iron. SPIKES.**

**Wrought Iron CHAIRS, New Pattern.**

**THE** Undersigned continues to contract, as usual, for the above articles. The reputation already acquired for their excellent quality is a guarantee that strict attention shall continue to be paid to the wants and interests of purchasers.

**CHARLES ILLIUS,**  
20 Beaver St., New York.

**Ray's Patent India Rubber Car Springs.**

Savannah, Ga., May 22, 1850.

**FOWLER M. RAY, Esq.,**  
Dear Sir: I have no hesitation in saying, after having used on our road your springs and Fuller's, that I consider yours decidedly the best in every particular, and in this opinion I am sustained by all our officers. Fuller's spring has a tendency to split, and also to chafe or abrade by the constant friction on the cast iron plates or disc; and in my opinion is not near so elastic as yours.

Your springs, which have been in use on our road for 12 or 15 months past, and in constant use under both passenger and freight cars, are to all appearances as elastic, sound and good, as when first put in use.

We are now building eighty-five new cars, of which for fifty-sets the springs have been ordered of you.

**GEORGE A. ADAMS,**  
Master Carpenter,  
Central Railroad and Banking Co. of Georgia.

**Connecticut River Railroad Office,**  
Northampton, May 4, 1850. }

**E. CRANE, Esq.,**  
Dear Sir: It is now about two years since I first tried the experiment of using a set of Ray's India-rubber Springs upon one of our merchandise cars, and although the car has been in constant service since that time, I do not on examination find the slightest difference either in the thickness or elasticity of the material.

The same result has followed wherever we have applied them, either for wheel or draw springs on Engines, Tenders or Cars. At present we use no other; either in replacing old springs or building new cars—and I am perfectly satisfied that for economy, durability, safety, and ease of motion, that Ray's India-rubber is the best article for Springs which has been presented to the public.

Yours respectfully, **J. HUNT,**  
Supt. Connecticut River Railroad.

**EDWARD CRANE, Esq.,**  
Dear Sir: Having applied to cars of the Boston and Worcester Railroad Corporation, Ray's Vulcanised Rubber Springs (where they have been in use for some two years last past), I have had occasion to observe their operation, and am free to say in answer to your inquiries, that they retain their elasticity perfectly during all changes of atmospheric temperature: and are in my opinion a most valuable acquisition to Railroad Cars—are not liable to derangement, as is the case with steel springs; while at the same time it costs less to apply them. Respectfully yours,

**D. N. PICKERING,**  
Supt. Motive Power, Boat & Wor. Railroad.  
Boston, April 15th, 1850.

**EMERSON'S**

PATENT

**CORRESPONDING VENTILATORS,**

For Ships, Steamers, etc.,

Manufactured by



**CHILSON, ALLEN, WALKER & CO.,**  
351 Broadway, New York.

**TO RAILROAD COMPANIES, CAR MANUFACTURERS, etc.**

**THE** Undersigned hereby gives public notice, that the Commissioner of Patents, pursuant to his decision in relation thereto, on the 8th day of October, 1850, issued to him a Patent for the sole right to manufacture, and exclusive use of the **INDIA RUBBER CAR SPRING**, on account of priority of invention of said Spring.  
**F. M. RAY.**  
New York, Oct. 23, 1850.

**RAILROAD CAR MANUFACTORY**

**TRACY & FALES,**  
**GROVE WORKS, HARTFORD, CONN.**  
Passage, Freight and all descriptions of  
**RAILROAD CARS,**

AS WELL AS

**LOCOMOTIVE TENDERS,**  
Made to order promptly.

The above is the Largest Car Factory in the Union. In quality of Material, and in Workmanship, Beauty and Good Taste, as well as Strength and Durability, we are determined our work shall be unsurpassed.  
**JOHN R. TRACY. THOS. J. FALES.**



**Monument Foundry.**

**A. & W. DENMEAD & SON,**  
Corner of North and Monument Sts.,—Baltimore,  
HAVING THEIR

**IRON FOUNDRY AND MACHINE SHOP**

In complete operation, are prepared to execute faithfully and promptly, orders for Locomotive or Stationary Steam Engines, Woolen, Cotton, Flour, Rice, Sugar Grist, or Saw Mills, Slide, Hand or Chuck Lathes, Machinery for cutting all kinds of Gearing, Hydraulic, Tobacco and other Presses, Car and Locomotive patent Ring Wheels, warranted, Bridge and Mill Castings of every description, Gas and Water Pipes of all sizes, warranted, Railroad Wheels with best fagotted axle, furnished and fitted up for use, complete

Being provided with Heavy Lathes for Boring and Turning Screws, Cylinders, etc., we can furnish them of any pitch, length or pattern.

Old Machinery Renewed or Repaired—and Estimates for Work in any part of the United States furnished at short notice.  
June 8, 1849.

**RAILROAD CAR AND COACH TRIMMINGS.**

**Doremus & Nixon,**  
IMPORTERS AND FURNISHERS

HAVE FOR SALE  
Plain Garnet Plush. Fig. Garnet Plush (Butterfly pat.  
"Crimson" "Crimson" (Elegant.  
"Scarlet" " " (Gen. Taylor.

**BROCATELLES.**

Crimson Silk Brocates. Gold and Maroon do.  
Gold and Blue " " Brown "  
Silk and Wool " " of every color.

**MOQUETTES.**

Of elegant designs and colors.

**GERMAN CLOTH FOR CAR LININGS.**

The most beautiful goods ever shown in this country, and the subscribers are the sole agents for the sale of them.

Oil cloths Enamelled with Gold. These goods can be  
" " Silver. furnished in any  
Do. Silver ground velvet printed. dimensions req'd.

**CURLED HAIR**

Of every description and quality.

JNO. W. A. STRICKLAND, Agent.  
New York, 1850. 1yl6

**FOWLER M. RAY'S  
Patent India-rubber Railroad  
CAR SPRING.**

New York and Erie Railroad Shops.  
Piermont, March 26, 1850.

This will certify that from practical experience in the use of Fowler M. Ray's India rubber Car Springs, I believe them to be far superior to any others now in use.

I have never known them to be affected by any change of temperature, as other Rubber Springs have been affected on this road.

I am at the present time repairing a Passenger Car that Mr. Ray and myself mounted with his springs about two years and eight months since.

The springs are at the present time as perfect, to all appearances, as when first applied to the car.

Respectfully yours,

**HORACE B. GARDNER,**  
Foreman of the Car Shops.

Supt. Office N.Y. & H. R.R.,  
New York, March 8, 1850.

This is to certify that we have used the Rubber Springs manufactured by Mr. F. M. Ray for the past twenty months, "both for Passenger and Freight Car Springs and Bumpers, and of different sizes" and have in every case given entire satisfaction, and I consider them the best spring now in use.

M. SLOAT, Supt.

Boston, March 5, 1850.

In answer to your enquiry about India-rubber Springs, I have to say that we have used them to a considerable extent on both freight and passenger cars, and also on several of our tenders; and I am very well satisfied that they answer all the purposes for which they are intended. I believe the India-rubber will soon supersede all other springs for cars and tenders.

Yours truly, **S. M. FELTON,**  
Supt. Fitchburg Railroad.

Office New Jersey Railroad Co.,  
Jersey City, March 8, 1850.

**FOWLER M. RAY, Esq.,**

Dear Sir: In answer to your enquiries respecting the operation of the Vulcanised Rubber Springs, purchased by our company from you some two years since, I reply that they are superior to any spring in use, (that I have either seen or heard of).

The improved form of your spring, consisting of a solid piece of vulcanised rubber with bands on the outside, is far superior to your first form, consisting of disks of rubber with metallic plates interposed.

The last named form was tried, if you recollect, at a much earlier period; and then was replaced by your last form.

I have no hesitation in saying that your springs have given entire satisfaction, and most cheerfully recommend them to railroad companies throughout the country for the following reasons:

1st. The cost is 30 per cent. less.  
2d. Saving of weight on each car of 8 wheels from 700 to 800 lbs.

3d. Less care and attention is required, as they are not liable to get out of repair.

4th. A great saving is secured in the wear and tear of the cars and rails from their great elasticity.

5th. The freedom from noise.

6th. There is greater safety in case of accident, as they cannot be broken.

7th. The comfort of passengers is enhanced sufficiently to pay the expense, waiving all the other reasons that I have given.

Should this fail to satisfy any person enquiring, you are at liberty to refer to me, No. 150 Washington St., Jersey City. Yours respectfully,

**T. L. SMITH, Supt.**

New York, March 11, 1850.

I have used the Patent India-rubber Spring purchased of Mr. Ray, upon the cars of the New York and New Haven Railroad, and have found them efficient and economical; and when applied to the axles and draw springs, believe them to be quite equal to any in use. I have found a combination of these springs with a steel spring under the transom beam a very satisfactory arrangement, and am now using this plan in all new cars.

Yours respectfully,  
**ROBERT SCHUYLER.**

February 25, 1850.

From practical observation of the use of the India-rubber Car Springs, manufactured and sold by your company, we are entirely satisfied in their application, and do not hesitate to recommend them as elastic, durable, requiring no repairs for years, and retaining their consistency during all extremes of weather. We have applied them for the past two years, and consider them superior for all railroad purposes.

Yours truly,

**OSGOOD BRADLEY,** Car Builder, Worcester.  
**T. & C. WASON,** do. Springfield.  
**DEAN, PACKARD & MILLS,** do. do.  
**DAVENPORT & BRIDGES,** do. Cambridgeport.

Office of the New Jersey Railroad Co.,  
Jersey City, March 7, 1850.

This is to certify that we have had Mr. F. M. Ray's India-rubber Springs in constant use under our cars, and as Bumper Springs for upwards of two years, and they have in every way given perfect satisfaction.

The present form of spring we deem far superior to the form of Disk, having used both forms, although we have none of those made in Disks at present in use.

We take pleasure in recommending these springs to all railroad companies.

**J. P. JACKSON, Vice Prest.**  
New Jersey Railroad and Trans. Co.

Roxbury, February 28, 1850.

In compliance with your request, I take great pleasure in stating the result of my experience in the use of "Ray's Patented Vulcanised India-rubber Car and Engine Springs." We have used them nearly two years, and never had one fail in any way. The cold weather does not affect them, as it has other rubber springs we have used.

With sixteen years' experience as superintendent of machinery on the Boston and Providence railroad, I take pleasure in saying that your springs are the best we ever used, or I ever saw used elsewhere. We have 20 cars rigged with them, of which I can say that the springs are as good now as when first applied. I put 24 lbs. of the rubber under the forward end of one of our heaviest engines, taking off 250 lbs. of steel springs—it has been in use 18 months, and is in as good condition now as when first put under the engine.

Very respectfully yours,

**GEO. S. GRIGGS,**  
Supt. of Machinery, Boston and Prov. R.R.

Fall River, February 2, 1850.

In answer to yours of the 20th ult. I would say that this company has for some 10 or 12 months past been using "Ray's India-rubber Springs." We have applied them to both passenger and freight cars with uniform success. They have invariably preserved their elasticity and consistency through all the extremes of weather; and we are now applying them whenever the steel spring fails. I am well satisfied that they are particularly adapted for railroad purposes.

Very respectfully yours,

**GEO. HAVEN,**  
Supt. Fall River Railroad.

Jersey City, March 9, 1850.

This is to certify that the present form of Mr. F. M. Ray's India-rubber Car Spring I consider far superior to the form of Disk, having used both forms.

I take pleasure in recommending these springs to all railroad companies.

**DAVID H. BAKER,**  
Foreman of Car Shop of N.J. R.R. & Trans. Co.

Harlem R.R. Depot,  
New York, March 7, 1850.

This is to certify that we have used Mr. F. M. Ray's India-rubber Springs for over eighteen months, and find them to be easy and durable, and recommend them to railroad companies as being superior to anything we have tried.

**J. M. SMART,**

Foreman at 42d St. Depot.

Old Colony Railroad Office,  
Boston, March 6, 1850.

**EDWARD CRANE, Esq.,**

President New England Car Co.,

Dear Sir: In compliance with your request I would state that the Old Colony Railroad Comp'y have had in use upon their road, India-rubber Springs furnished by your company, for more than eighteen months past, during which time they have been extensively used under Passenger and Freight Cars, Locomotive Tenders, and for Drawer and Buffing Springs, with the most perfect success. The elasticity and consistency of the Rubber has never been unfavorably affected by either extremes of heat or cold—and from the experience which we have had in the use of Rubber Springs, I think them well adapted for railroad purposes—and therefore we have for some months past used Rubber almost exclusively, in all places where springs are required.

Respectfully yours, etc.,

**JAS. H. MOORE,**  
Supt. O. C. Road.

Troy, February 27, 1850.

We have been using your India-rubber Car Springs for nearly two years—and we take pleasure in saying that in our opinion the rubber has to a certain extent already, and may eventually entirely supersede all other Springs for Railroad Car purposes. We now use it entirely for Draw Springs and Bumpers, considering it better and lighter than steel.

During our two years' experience in the use of it, we have not known any to lose their elasticity, or fail in any way; and we cheerfully recommend the rubber for railroad car springs. Very respectfully,  
**EATON, GILBERT & CO.**

**Passenger Car Linings.**

THE Advertiser continues to make to order the Enamelled Car Linings which have been so highly approved the last three years, and are now exclusively used by all the Northern Railroads. No pains are spared to get out new styles, and adapt them to the tastes of every consumer.

Orders addressed to **CHARLES STODDER, No. 75 Kilby street, Boston,** will have prompt attention.  
March 23, 1850. 2m

**India-rubber for Railroad Cos.**

**RUBBER SPRINGS—Bearing and Buffer—Fowler's Patent—Hose from 1 to 12 inches diameter. Suction Hose. Steam Packing—from 1-16 to 2 in. thick. Rubber and Gutta Percha Bands.** These articles are all warranted to give satisfaction, made under **Tyer & Helm's** patent, issued January, 1849.—No lead used in the composition. Will stand much higher heat than that called "Goodyear's," and is in all respects better than any in use. Proprietors of railroads do not be overcharged by pretenders.

**HORACE H. DAY,**

Warehouse 23 Courtlandt street,

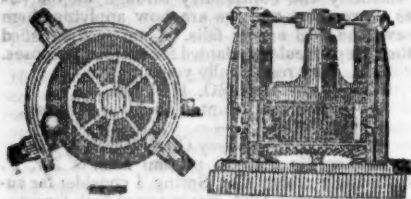
New York, May 21, 1849.

**Spikes, Spikes, Spikes.**

ANY person wishing a simple and effective Spikes Machine, or a number of them, may be supplied by addressing  
**J. W. FLACK,**  
Troy, N. Y.  
March 6, 1850.

## MACHINERY.

## Henry Burden's Patent Revolving Shingling Machine.



THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phoenixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has given universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous: considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll sounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y.

P. A. BURDEN.

## Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery for making Spikes, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, Agent,  
Troy Iron and Nail Factory, Troy, N. Y.

**CHILLED RAILROAD WHEELS.**—THE UNDERSIGNED are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,  
Willow St., below 13th,  
Philadelphia, Pa.

## Brown's Old Established SCALE WARE HOUSE,

NO. 234 WATER ST., NEW YORK.

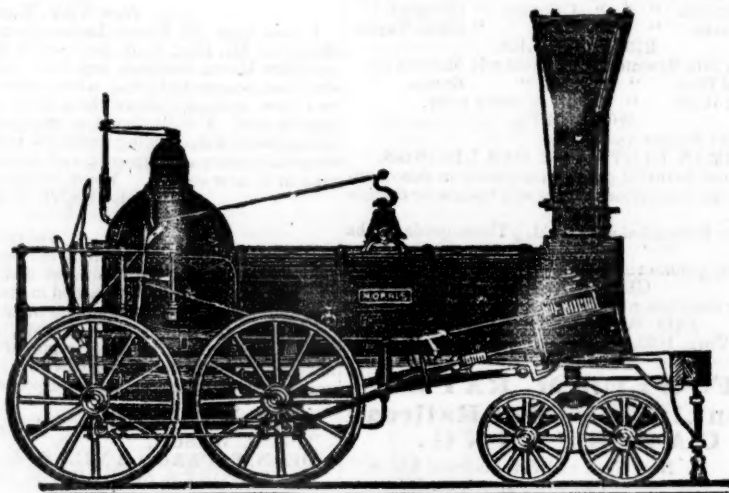
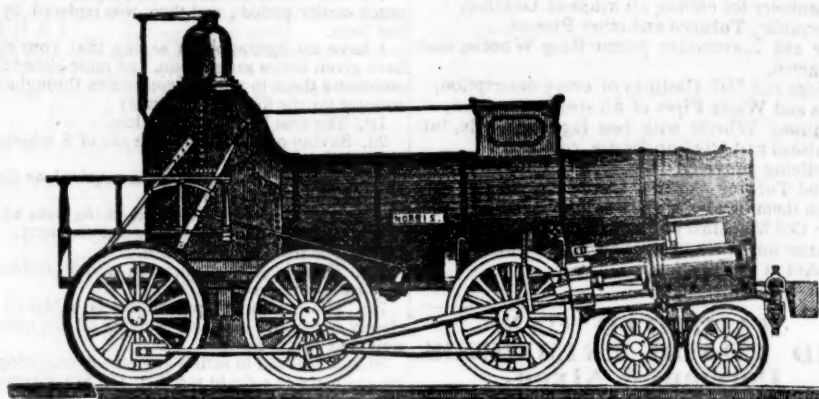
THE Subscriber, Practical Manufacturer of Scales of every description, respectfully asks the attention of Railroad Companies to his Improved Wrought Iron Railroad Track and Depot Scales which for strength, durability, accuracy, convenience in weighing, and beauty of workmanship, are not surpassed by any others in this country.

He is aware that this is rather a bold assertion for him to make, yet he can say with confidence that they have but to be tried to give them precedence over all others.

J. L. BROWN.

Bank Scales made to order, and all Scales of his make Warranted in every particular.

References given if required

NORRIS' LOCOMOTIVE WORKS.  
BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA.

THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size. Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Wrought Iron Tyres made of any required size—the exact diameter of the Wheel Centre, being given, the Tyres are made to fit on same without the necessity of turning out inside.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS, BROTHERS

## PATENT MACHINE MADE HORSE-SHOES.

The Troy Iron and Nail Factory have always on hand a general assortment of Horse Shoes, made from Refined American Iron.

Four sizes being made, it will be well for those ordering to remember that the size of the shoe increases as the numbers—No. 1 being the smallest.

P. A. BURDEN, Agent,  
Troy Iron and Nail Factory, Troy, N. Y.

## Etna Safety Fuse.

THIS superior article for igniting the charge in wet or dry blasting, made with DUPONT'S best powder, is kept for sale at the office and depot of

REYNOLDS &amp; BROTHER,

Sole Manufacturers,

No. 85 Liberty St.

NEW YORK.

And in the principal cities and towns in the U. States.

The Premium of the AMERICAN INSTITUTE was awarded to the Etna Safety Fuse at the late Fair held in this city.

November 3, 1849.

1y

COLUMBUS, OHIO,  
Railroad Car Manufactory.  
RIDGWAYS & KIMBALL,

HAVE established at this central point, the manufacture of Passenger, Freight, Gravel and Hand Cars for Railroads, and assure all Western Railroad Companies that it will be their constant aim to procure the best materials and workmen, and to turn out the best kind of work at fair prices. Specimens may be seen on the Columbus and Xenia Railroad. The patronage of Railroad Companies is respectfully solicited.

1y8

## FOR SALE.

THREE LOCOMOTIVES, Manufactured by M. W. Baldwin, of 10 tons weight, all in complete repair, and now running on the Columbia and Philadelphia Railroad.

For particulars apply to A. L. Roumfort, Supt. of said road, either at Philadelphia, or Parkersburg, Chester county.

A. L. ROUMFORT,  
Supt. Motive Power Col. & Philad. R.R.



**MR. HALE:**—"The New England Car Co., having been engaged for the last six months in introducing the Vulcanized India-rubber Car Springs upon the different railroads in this and other states, and having in particular introduced it upon the Boston and Worcester railroad with perfect success, were much gratified to find, by your paper of this morning, that the article had given satisfaction to the president of that corporation, and the terms of just commendation in which you were pleased to speak of it. But their gratification was scarcely equalled by their surprise, when, or arriving at the close of your paragraph, they found the results of all their labors attributed to a foreign source, with which the New England Car Co. has no connection. The material used on the Boston and Worcester railroad, and all the other railroads in this country, where any preparation of India-rubber has been successfully applied, is entirely an American invention, patented in the year 1844 to Charles Goodyear, of New Haven, Conn., and the application of it to this purpose and the form in which it is applied are the invention of F. M. Ray of New York. The only material now in use, and so far as has yet appeared, the only preparation of India rubber capable of answering the purpose, has been furnished under these patents by the New England Car Company, manufactured under the immediate inspection of their own agent. If any other should be produced, the right to use it would depend upon the question of its interference with Mr. Goodyear's patent. The New England Car Company have their place of business in this city at No. 99 State street, and are prepared to answer all orders for the Vulcanized India rubber Car Springs, of the same quality and of the same manufacture as those which they have already placed on your road, and most of the other roads terminating in this city."

And yet Mr. Kneivitt is using these experiments made upon the Springs of the Car Company to induce the public to purchase his springs, and is attempting to impose upon them the belief that the springs used were furnished by him! We ask whether such a course is honorable, or entitles his statements to much consideration from the public.

The above Springs are for sale 98 Broadway, New York, and 99 State street, Boston.

EDWARD CRANE Agent, Boston.

F. M. RAY, Agent, New York.

Boston, May 8, 1849.

#### STABILITY—SECURITY—PERPETUITY.

### Mutual Life Insurance Co. of New York.

#### No. 35 WALL STREET. A MILLION OF DOLLARS

Securely invested in Bonds and Mortgages on real estate in this city and Brooklyn, and stocks of the State and City of New York and United States Government.

The company declared a dividend of profits of fifty-two per cent. on all existing policies on the 31st of January, 1849.

#### All the Profits are Divided Among the Insured.

Persons may effect insurance on their own lives and the lives of others.

A married woman can insure the life of her husband, the benefits of which are secured by law for the exclusive use of herself or children.

Clergymen and all others dependent upon salaries or their daily earnings are specially invited to avail themselves of a resource whereby their surviving families may be secured from the evils of penury.

Pamphlets explanatory of the principles of Mutual Life Insurance, and illustrating its advantages, with forms of application, may be obtained at the office of the company, 35 Wall street, or of any of its agents.

#### TRUSTEES.

Jos. B. Collins, Wm. J. Hyslop, R. H. McCurdy, Fred. S. Winston, C. W. Faber, John P. Yelverton, Theo. Sedgwick, Stacy B. Collins, John H. Swift, John Wadsworth, S. M. Cornell, Gouv. M. Wilkins, John V. L. Pruyn, Jas. S. Wadsworth, Charles Ely, John C. Cruger, Charles King, Alfred Pell, Abraham Bininger, Alfred Edwards, Wm. Betts, Joseph Blunt, Isaac G. Pearson, Henry Wells, Wm. Moore, George R. Clark, Jona. Miller, David A. Comstock, Robert Schuyler, James Chambers, Joseph Tuckerman, Moses H. Grinnell, Wm. J. Banker, John M. Stuart, Francis S. Lathrop, Nathaniel Hayden.

JOSEPH B. COLLINS, President.  
ISAAC ABBATT, Secretary.

3m9

### Engine and Car Works, PORTLAND, MAINE.

**THE PORTLAND COMPANY,** Incorporated August 8th, 1846, with a capital of \$250,000, have erected their extensive Works upon the deep water of Portland Harbor, and receive and transport, to and from their works direct, to and from vessels of any class.

They now manufacture to order, and deliver upon the Railroads running in each direction from the city, or on shipboard as wanted, Locomotive, Stationary, or Steam Boat Engines; Passenger, Mail, Freight, Earth and Hand Cars; Railway Frogs, Switches, Chairs and Castings; and every other description of Machinery.

HORACE FELTON,

Superintendent.

JAMES C. CHURCHILL,  
General Agent and Clerk.

#### Rosendale Cement.

**THE NEWARK AND ROSENDALE LIME AND CEMENT CO.** are now manufacturing at their works in NEWARK, N. J., and Ulster county, N. Y., a very superior article of *Hydraulic Cement*—also Lime Calcine Plaster, etc. Contractors and dealers will find it to their advantage to call or make application before purchasing elsewhere. All communications addressed to the subscriber, at Newark, N. J., will be punctually attended to.

ly\*15

HENRY WILDE, Secretary.

### RAILROADS.

#### BOSTON AND MAINE RAILROAD.

**Summer Arrangement, 1850.**  
Outward Trains from Boston

For Portland at 7, 11, am. and 4½ pm.

For Great Falls at 7, 11, am., 4½ pm.

For Haverhill at 7, 9, 11 am., 2½, 4½, 6½, 7 pm.

For Lawrence (South Side,) 7, 11 am., 2½, 4½, 6½, 7 pm.

(North " ) 7½, 9, a.m. 12m., 5, 6½, 7 pm.

For Reading 7, 9, 11 am. 12m. 2½, 4½, 5, 6½, 7½, 9½ pm.

The Station in Boston is on Haymarket Square.

THOS. S. WILLIAMS, Super't.

July 1, 1850.

#### EASTERN RAILROAD.

**SUMMER ARRANGEMENT.**

On and after Monday, June 17th, 1850, trains will leave Boston daily (Sundays excepted):

For Lynn, 7, 9½, 11 a.m., 12 m., 2½, 4½, 5, 6, 7 p.m.

Salem, 7, 9½, 11 a.m., 12 m., 2½, 3, 4½, 6, 7 pm.

Manchester and Gloucester, 9½ a.m., 3, 6 p.m.

Marblehead, 7, 9½, 12 a.m. 2½, 4½, 6, 7 p.m.

Ipswich, 7, 11, 12 a.m., 2½, 4½, 7 p.m.

Newburyport, 7, 11, 12 a.m., 2½, 4½, 7 p.m.

Portsmouth, 7, 11 am., 4½ pm.

Portland, Me., 7, 11 am., 4½ pm.

And for Boston,

From Portland, 5, 10½ am., 5 pm.

Portsmouth, 7½, 9½ am., 1, 7½ pm.

Newburyport, 6½, 8½, 11½ am., 1½, 5, 8 pm.

Ipswich, 7:40, 8:35, 11:42 a.m. 2:20, 5:22, 8½.

Gloucester, 7½ am., 1½, 8 pm.

Manchester, 7 am., 2 pm.,

Salem, 6½, 7½, 8½, 9½, 10½ am., 12½, 2½, 3, 6, 9, pm.

Lynn, 6½, 7½, 8½, 9½, 10½ am., 12½, 2½, 3, 6½, 9½ pm.

\*Or on their arrival from the East.

Freight trains each way daily. Office 17 Merchants' Row, Boston.

JOHN KINSMAN, Superintendent.

#### ALBANY AND BUFFALO RAILROADS.

Four Trains daily, Sundays excepted, viz:  
Leave Albany, 6 a.m., 9 a.m., 2 p.m., 7 p.m.  
Reach Buffalo, 15 hours, 18 hours, 23 hours, 18 hours.

Arrive from Buffalo, 7 p.m., 2½ a.m., 12½ m., 3½ p.m.  
Passengers by the *Express Train* reach Buffalo from New York, and New York from Buffalo, in 24 hours. The Isaac Newton and Oregon connect at Albany with this Train. Baggage cars, with careful baggage masters, run through with all the trains.

For Schenectady, Saratoga Springs & Whitehall, Leave Albany at 7 a.m. and 2 p.m. For Schenectady only at 6, 7 and 9 a.m. and 12½, 2 and 7 p.m. For Erie Canal packets at 7 a.m. and 7 p.m. By Plank Road from Schenectady to Saratoga at all hours by stages, etc.

The *Eastern Trains* leave Albany at 7 a.m. and 3 p.m. The wagons of the company take baggage free between railroads and steamboats at Albany.

E. FOSTER, Jr., Sec'y

Albany and Schenectady Railroad Co.

Albany, August, 1849.

### NEW YORK AND HARLEM RAILROAD. WINTER ARRANGEMENT.

On and after Monday, October 21st, 1850, the Cars will run as follows, (Sundays excepted) until further notice:

Trains will leave the City Hall, New York, for—

Harlem and Mott Haven, 7½, 10, 11½ a.m., 1½, 3, 3½, 4, 4½, 5½, 6½, 10½ p.m.

Morrisania Village, 7½, 10, am., 1½, 3½, 4½, 5½, 6½, 10½, pm.

Fordham, 7½, 8½, 10, am., 1½, 2½, 3½, 4½, 5½, 6½, 10½, pm.

Williams' Bridge, 8½, 10, am., 2½, 3½, 4½, 6½ pm.

Hunt's Bridge, Bronxville, Scarsdale and Hart's Corners, 8½, 10 am., 3½, 4½ pm.

Tuckahoe and White Plains, 8½, 10 am., 2½, 3½, 4½, pm.

Pleasantville, New Castle, Bedford, Mechanicsville, Purdy's, Croton Falls, and intermediate stations, on signal, 8½ am., 2½, 3½ pm.

Brewster's, Towner's, Patterson, Paulding's, South Dover, Dover Furnace, and Dover Plains, 8½ am., 2½ pm.

NOTICE—The trains leaving City Hall for Fordham at 7 30 am., and 1 30, 5 30 and 6 30 pm., and for Mott Haven and Harlem at 7 30 and 11 30 am., and 1 30, 4 30 and 6 30 pm.; returning from Fordham, 5 45, 7 15 and 9 am., and 3 and 7 pm., and Mott Haven and Harlem, 6 05, 7 30, 9 15 am., 12 30, 3 16, 5 15, 7 15 pm., are Local Accommodation trains, for which there is a special reduced rate of commutation.

Passengers are reminded of the great danger of standing upon the platform of the cars, and they are hereby notified that the practice is contrary to the rules of the Company, and that they do not admit any responsibility for injury sustained by any passenger upon the platforms, in case of accident.

Returning to New York will leave Harlem and Mott Haven, 6 7½, 8 35, 9½, 10 20, am., 12½, 3 05, 3½, 5½, 7½ pm.

Morrisania Village, 5 53, 7 23, 8 28, 9 08, 10 13 am., 2 53, 3 08, 5 05, 4 08 pm.

Fordham, 5½, 7½, 8 20, 9, 10 05, 10½ am., 2 50, 3, 5, 7 pm.

William's Bridge, 5 40, 8½, 10, 10 40 am., 2½, 4½ pm.

Hunt's Bridge, 8 06, 9 50, am., 2 36, 4 38, pm. On signal.

Bronxville, 7 58, 9 41 a.m., 2 28, 4 32 p.m. On signal.

Tuckahoe, 7 55, 9 36, 10 24 am., 2 25, 4 29 pm.

Scarsdale, 7 45, 9 25 am., 2½, 4 20 pm. On signal.

Hart's Corners, 7 37, 9 17 am., 2 07, 4½ pm. On signal.

White Plains, 7½, 9 10, 10 am., 2, 4 10 pm.

Kisco, 8 55, 9 52 am., 4 03 pm. On signal.

Unionville, 8 42, 9 44 am. 3 55 pm. On signal.

Pleasantville 8 35, 9 38 am., 3 48 pm.

Chappaqua, 8 27, 9 32 am. 3 42 pm. On signal.

New Castle, 8½, 9 21 am., 3 32 pm.

Bedford, 8 05, 9½ am., 3 26 pm.

Mechanicsville 7 55, 9 08 am., 3 19 pm.

Golden's Bridge, 7 43, 9 02 am. 3 14 pm. On signal.

Purdy's 7 35, 8 55 am., 3 8 pm.

Croton Falls, 7½, 8 59 am., 3 02 pm.

Brewster's, 8 35 am., 2 49 pm.

Towner's, 8 20 am., 2 34 pm.

Patterson, 8 12 am., 2 26 pm.

Paulding's, 8 02 am., 2 16 pm.

South Dover, 7 47 am., 2 02 pm.

Dover Furnace, 7 40 am., 1 55 pm.

Dover Plains, 7½ am., 1½ pm.

Passengers from the stations between Twenty-seventh st. and Fordham, "going above White Plains," will take the Accommodation trains to Fordham, at 7 30 am., and 1 30 pm., and the Dover Plains train will not stop below Fordham.

The trains leaving City Hall at 7 30, 10, 11 30, 1 30, 4, 5 30, 6 30, 10 30—returning leaving Mott Haven and Harlem at 6, 7 30, 9 15, 12 30, 3 05, 3 15, 5 15, 7 15, will land and receive passengers at 27th, 42d, 50th, 61st, 79th, 86th, 109th, 115th, 125th and 132d streets.

The Dover Plains train from New York at 8 15 am. and 2 30 pm.—returning leaving Dover Plains at 7 30 am., will not stop between White Plains and New York (except at Tuckahoe, Williams' Bridge and Fordham) unless to land passengers coming from above Croton Falls—and no fare collected less than Fordham fare.

A car will precede each train ten minutes to take up passengers in the city. The last car will not stop, except at Broome st. and 27th street.

The Freight Trains will leave New York at 12 m. Returning, will leave Dover Plains at 2 pm. daily.—An Extra freight train will leave New York on Mondays, Wednesdays and Fridays at 9 am. Returning, will leave Dover Plains Tuesdays, Thursdays and Saturdays at 8 o'clock am.

For Sunday Arrangements, see hand bills.  
M. SLOAT, Sup't.

## NEW YORK &amp; ERIE RAILROAD.

Summer Arrangement, 1850.

Steamboats leave daily, Sunday excepted, from the pier foot Duane st., at 6½ a.m., and 6½ p.m., for Piermont, there connecting with the new and comfortable broad gauge cars of this road, running to Jefferson at the head of Seneca Lake in 12 hours, where passengers take the new and splendid steamer Benj. Loder for Geneva. At Geneva they take any of the trains of the central line for Rochester, Buffalo, and the west. Breakfast and supper on board the steamboats at each end.

Express freight trains daily over the whole road in 24 hours.

FARES.	
Between New York and Buffalo,	\$9 85
" " Geneva,	6 00
" " (second class, 4 50	

CHAS. MINOT, Supt.

August 1st, 1850.

NORTHERN RAILROAD,  
NEW YORK.

CARS run between Rouses Point and Chateaugay daily, Sundays excepted, as follows:

Leave Rouses Point at 3½ A.M.  
Leave Chateaugay at 6½ P.M.

On the arrival of the cars at Chateaugay, stages are in readiness to take the passengers to Ogdensburg, where they arrive the same day.

Passengers leave Ogdensburg in the morning by stage, and take the evening train from Chateaugay to Rouses Point, where they go immediately on board the steamboats which run north and south on Lake Champlain.

Passengers leaving New York in the evening by the way of Whitehall, will arrive at Rouses Point the next night, and the next morning pass directly from the boat to the cars, and arrive at Ogdensburg the same day.

CHARLES L. SCHLATTER, Supt.

WESTERN AND ATLANTIC RAILROAD,  
FROM ATLANTA, GA., TO CHATTANOOGA, TENN.  
140 Miles.

## PASSENGER SCHEDULE.

Leave Chattanooga daily, Sundays excepted, at 8½ a.m.  
Arrive at Kingston . . . by 12 m.  
" Dalton . . . by 3 p.m.  
" Chattanooga . . . by 6 "  
Leave Chattanooga daily, Sundays excepted, at 7 a.m.  
Arrive at Dalton . . . by 9½ "  
" Kingston . . . by 12 m.  
" Atlanta . . . by 4 p.m.

The fare is now permanently reduced to three cents per mile for way as well as through Passengers; children and servants two cents per mile.

There are two Railroad routes from Atlanta to the Seaboard, viz: one by the Georgia Railroad to Augusta, and thence to Charleston by the South Carolina Railroad; the other by the Macon and Western Railroad to Macon, and thence to Savannah by the Central Railroad.

At Kingston, 60 miles north of Atlanta, the Rome Railroad branches off to Rome on the Coosa river, which admits of steamboat navigation as far down as Greensport in Ala. Mail stages are in operation from Rome leading towards Tuscaloosa, Ala., Columbus, Miss., Memphis, Tenn., etc.

At Dalton, 100 miles north of Atlanta, a line of stages branches off to Knoxville, Tenn., which will be superseded by the East Tennessee and Georgia Railroad as rapidly as the same is completed.

At Chattanooga a number of steamboats are in successful operation on the Tennessee river, and from that terminus of the road stages run to Nashville, which will be superseded by the Nashville and Chattanooga Railroad as rapidly as the same is completed.

WM. D. FULLTON, Supt. Transp.

Transportation W. & A. R. R.,  
Atlanta, March, 1850.GREAT NORTHERN & SOUTHERN MAIL  
ROUTE. From New York to Charleston, S. C.

daily, via Philadelphia, Baltimore, Washington City, Richmond, Petersburg, Weldon and Wilmington, N. C.

Travellers by this route, leaving New York at 4½ p.m., Philadelphia at 10 p.m., and Baltimore at 6 a.m., proceed without delay at any point on the route, arriving at Richmond, Va., in a day, and at Charleston, S. C., in two and half days from New York.

Through tickets from New York to Charleston, \$20 00  
" " Baltimore to Richmond, 7 00  
" " Petersburg, 7 50

For tickets to Richmond and Petersburg, or further information, apply at the Southern Ticket Office, adjoining the Washington Railroad Ticket Office, Pratt Street, Baltimore.

STOCKTON &amp; FALLS.

## LITTLE MIAMI RAILROAD.—SUMMER ARRANGEMENT.

Cincinnati and Sandusky.

FIRST Passenger Train leaves Depot on East Front street, at 5 o'clock 10 minutes A. M. stops for breakfast at Morrow, and arrives at Springfield at 11 10 A. M. Leaves Springfield for Sandusky at 11 50 A. M.

Second Passenger Train leaves Depot 3 P. M. arrives at Springfield at 9 P. M. Passengers take tea at Springfield, and leaves for Sandusky at 9½ P. M.

RETURNING.—First Train leaves Springfield at 4 A. M. Stop for breakfast at Xenia, and arrives at Cincinnati at 10 15 A. M.

Second Train leaves Springfield at 2½ P. M. Stop for tea at Morrow, and arrives at Cincinnati, at 8½ P. M. Passengers taking the Morning Train arrive at Sandusky at 9 P. M. Those taking the Afternoon Train arrive at 7½ A. M. next morning, and proceed directly on in the boats.

Passengers for Columbus, Zanesville, Wheeling, and intermediate towns, should take the 5, 10 A. M., Train. The Ohio Stage Company are running the following Lines in connection with the Trains:

A Daily Daylight Line to Columbus from Springfield in connection with the Morning Train from Cincinnati. Also, Daily Lines to Columbus, from Xenia and Springfield, connecting with the 3 o'clock p.m. train from Cincinnati.

Fare from Cincinnati to Xenia	\$1 90
" " Springfield	2 50
" " Sandusky city	6 50
" " Buffalo	10 00
" " Columbus	4 50

For other information and through tickets, apply at the Ticket Office on Broadway, near Front-st., Cincinnati.

W. H. CLEMENT, Superintendent.

The Company will not be responsible for Baggage exceeding 50 dollars in value, unless the same is returned to the Conductors or Agent, and freight paid at the rate of a passage for every 500 dollars in value above that amount.

## PHILADELPHIA, WILMINGTON, &amp; BALTIMORE RAILROAD.

Summer Arrangement.

April 1st, 1849.—Fare \$3.

Leave Philadelphia 8½ am., and 10 pm.  
Leave Baltimore 9 am., and 8 pm.  
Sunday—Leave Philadelphia at 10 pm.  
" Baltimore at 8 pm.

Trains stop at way stations.

Charleston, S. C.

Through tickets Philadelphia to Charleston, \$20.

Pittsburg and Wheeling.

Through ticket, Philadelphia to Pittsburg, \$12.

Wheeling, 13.

Through tickets sold at Philadelphia office only.

Wilmington Accommodation.

Leave Philadelphia at 12 m. 4 and 7 pm.

Leave Wilmington at 7½ am., 4½ and 7 pm.

Newcastle Line.

Leave Philadelphia at 2½ pm.—Baltimore at 1½ pm.

Fare \$3.—Second class, \$2.

N.B.—Extra baggage charged for.

I. R. TRIMBLE, Gen. Supt.

## BALTIMORE AND SUSQUEHANNA RAILROAD.—Reduction of Fare. Morning and Afternoon Trains between Baltimore and York.—The Passenger Trains

run daily, except Sundays, as follows:  
Leave Baltimore at 9 am. and 3½ pm.  
Arrive at York at 9 am. and 6½ pm.  
Leave York at 5 am. and 3 pm.  
Arrive at Baltimore at 12½ pm. & 8 pm.  
Leave York for Columbia at 1½ pm. & 8 am.  
Leave Columbia for York at 8 am. & 2 pm.

Fare:	
Fare to York	\$1 50
" Wrightsville	2 00
" Columbia	2 12½

Way points in proportion.

## PITTSBURG, GETTYSBURG, AND HARRISBURG.

Through tickets to Pittsburg via stage to Harrisburg

Or via Lancaster by railroad

Through tickets to Harrisburg for Gettysburg

In connection with the afternoon train at 3½ o'clock, a horse car is run to Green Spring and Owings' Mill, arriving at the Mills at 5½ pm.

Returning, leaves Owings' Mills at 7 am.

D. C. H. BORDLEY, Supt.

Ticket Office, 63 North st.

## PHILADELPHIA &amp; READING RAILROAD

Passenger Train Arrangement for 1850.

A Passenger Train will leave Philadelphia and Pottsville daily, except Sundays, at 9 o'clock a.m.

The Train from Philadelphia arrives at Reading at 12 18 m.

The Train from Pottsville arrives at Reading at 10 43 a.m.

	Fares.	Miles.	No.1.	No.2.
Between Philad. and Pottsville,	92	\$3 50 and \$3 00		
" " Reading,	58	2 25	1 90	
" " Pottsville	34	1 40	1 20	

\*Five minutes allowed at Reading, and three at other way stations.

Passenger Depot in Philadelphia corner of Broad and Vine streets.

## BALTIMORE AND OHIO RAILROAD AND WASHINGTON BRANCH.

On and after January 1, 1850, Passenger Trains will run as follows:

Leave Baltimore for Ellicott's Mills, Frederick, Harper's Ferry, Martinsburg, Hancock and Cumberland, every morning at 7½ o'clock. This line carries the Great Mail, and connects with Post Coaches at Cumberland, for Wheeling and Pittsburg, over the National Road. Also with the Winchester Trains, at Harper's Ferry. N.B.—Passengers for Pittsburg take the steamers of the Monongahela slack water navigation at Brownsville, only 76 miles from Cumberland.

Leave Baltimore for Ellicott's Mills, Frederick and Harper's Ferry, daily, except Sunday, at 4½ p.m.

Leave Baltimore for Washington City, daily, at 6 a.m. and 5 p.m.—daily, except Sunday, at 9 a.m. The early train connects with the Great Southern Line, via Fredericksburg and Richmond, to Charleston.

Leave Cumberland for Baltimore, etc., at 8½ a.m., daily, connecting with the train from Winchester at Harper's Ferry—with the Evening Train to Washington City, at the Relay House—and with the Evening Train to Philadelphia, at Baltimore. Time for arriving at Baltimore, 5½ p.m.

Leave Harper's Ferry for Baltimore, daily, except Sunday, at 7½ a.m.—taking in Passengers who leave Frederick at 8½ a.m.

Leave Washington for Baltimore, daily, at 6 a.m. & 5½ p.m., and daily, except Sunday, at 9½ a.m. The early train connects at the Relay House with the morning line to Cumberland and the West, and at Baltimore with the day line to Philadelphia and New York.

Through tickets are sold at Philadelphia and Baltimore for Pittsburg and Wheeling, and at Philadelphia and New York for Charleston, S. C., at the following

Through tickets are sold at *Philadelphia and Baltimore* for Pittsburgh and Wheeling, and at *Philadelphia and New York* for Charleston, S. C., at the following

Passengers leaving New York not later than the afternoon line via Newark, etc., reach Baltimore in season to take the next morning's lines to the South and West.

Passengers leaving Cumberland in the morning and Washington in the evening lines, reach Baltimore in season to proceed to Philadelphia by the evening train at 8 p.m.—so as to reach New York before noon the next day.

An Emigrant line by burthen cars, leaves Baltimore every morning, except Sundays, at 4 o'clock—connecting with a line of the previous day from N. York—and at Cumberland with a wagon line to Pittsburg or Brownsville and Wheeling. Fare by this line:

From New York to Pittsburg, \$8 00  
" Philadelphia " 6 50  
" Baltimore " 5 00

By order, J. T. ENGLAND, Agent.

## SOUTH CAROLINA RAILROAD.—A Passenger Train runs daily from Charleston, on the

arrival of the boats from Wilmington, N. C., in connection with trains on the

Georgia, and Western and Atlantic Railroads—and by stage lines and steamers connects with the Montgomery and West Point, and the Tusculum Railroad in N. Alabama.

Fare through from Charleston to Montgomery daily

Fare through from Charleston to Huntsville, 22 00

Decatur and Tusculum

The South Carolina Railroad Co. engage to receive merchandise consigned to their order, and to forward the same to any point on their road; and to the different stations on the Georgia and Western and Atlantic Railroad; and to Montgomery, Ala., by the West Point and Montgomery Railroad.

JOHN KING, Jr., Agent.



**FAIRBANKS' RAILROAD SCALES.**—THE subscribers are prepared to construct at short notice, *Railroad and Depot Scales*, of any desired length and capacity. Their long experience as manufacturers—their improvements in the construction of the various modifications, having reference to strength, durability, retention of adjustment, accuracy of weight and dispatch in weighing—and the long and severe tests to which their scales have been subjected—combine to ensure for these scales the universal confidence of the public.

No other scales are so extensively used upon railroads, either in the United States or Great Britain; and the managers refer with confidence to the following in the United States.

Eastern Railroad. Boston & Maine Railroad.  
Providence Railroad. Providence and Wor. Road.  
Western Railroad. Concord Railroad.  
Old Colony Railroad. Fitchburg Railroad.  
Schenectady Railroad. Syracuse and Utica Road.  
Balt. and Ohio Railroad. Baltimore and Susq. Road.  
Phila. & Reading Road. Schuylkill Valley Road.  
Central (Ga.) Railroad. Macon and Western Road.  
New York and Erie Railroad.

And other principal Railroads in the Western, Middle and Southern States.

E. & T. FAIRBANKS & CO.

St. Johnsbury, Vt.

Agents, } FAIRBANKS & Co., 89 Water St., N. York.  
} A. B. NORRIS, 196 Market St. Philadelphia.  
April 22, 1849. ly\*17

### Hydraulic Cement.



**HYDRAULIC CEMENT, OF BEST QUALITY**, manufactured at their works, for sale in lots to suit purchasers.

Also, Ground Lime, a superior article for Builders.  
ISAAC FRYER, Sec'y.  
January 19, 1850. ly

**NORRIS' LOCOMOTIVE WORKS,**  
SCHENECTADY, N. Y.

THESE Works are in full operation in Manufacturing to order, Locomotive Steam Engines & Tenders, of the best principle and construction of material, using wrought iron heavy frames with pedestals welded thereto, and all parts of the engine made of the best wrought iron, except cylinders, pumps and boxes—obtaining greater durability, and carrying less weight over the road, than engines constructed of cast iron.

Wrought Iron Tires made any required size, and Tire Bars bent and welded with dispatch.

Chilled Wheels for Cars, Trucks and Tenders, made from the toughest iron.

Driving and Tender and Car Wheels fitted to Axles with Brass Boxes and Springs, and Railroad Machinery generally. Manufactured and for sale by

April 11, 1849. E. S. NORRIS.

### CORROSIVE SUBLIMATE.

THIS article now extensively used for the preservation of timber, is manufactured and for sale by **POWERS & WEIGHTMAN**, manufacturing Chemists, Philadelphia.  
Jan. 20, 1849.

### Nashua Iron Co.,

NASHUA, NEW HAMPSHIRE.

MANUFACTURERS of Bowling, Pembroke and Lowmoor Locomotive Tires, Engine Frames, Crank and Car Axles, Wrought Iron Shafting of all sizes, Shapes of all descriptions used in Machine shops and upon Railways.

FRANKLIN MONROE, Treasurer.  
Messrs. Fullerton & Raymond, Agents, Boston.

Orders received by the Treasurer at Nashua, N.H., or by the Agents in Boston or New York.

### CENTRAL RAILROAD FROM SAVANNAH TO MACON, (Ga.) 190½ miles.

Passenger Trains leave Savannah and Macon daily at 7 a.m.  
Passenger trains arrive daily at Savannah, 6 15 p.m.  
" " " " Macon, 6 45 p.m.

This road, in connection with the Macon and Western road from Macon to Atlanta, and the Western and Atlantic road from Atlanta to Dalton, now forms a continuous line of 391½ miles in length\* from Savannah to Dalton, Murray county, Ga. and with the Memphis Branch railroad, and Stages connect with the following places:

Tickets from Savannah to Macon,	\$5 75
" " " Atlanta,	9 50
" " " Augusta,	6 50
" " " Columbus,	15 00
" " " Opelika,†	17 00
" " " Jacksonville, Ala.,	20 00
" " " Tallahassee,	
" " " Huntsville } Ala.,	22 00
" " " Decatur,	
" " " Tusculum, Ala.,	22 50
" " " Tuscaloosa, Ala.,	
" " " Columbus, Miss.,	23 00
" " " Aberdeen,	
" " " Holly Springs,	
" " " Nashville, Tenn.,	
" " " Murphreesboro',	25 00
" " " Columbia, do.,	
" " " Memphis, do.,	30 00

An extra Passenger Train leaves Savannah on Saturdays, after the arrival of the Steam-ships from New York, for Macon, and connects with the Macon and Western railroad; and on Tuesdays, after the arrival of the Macon and Western cars, an extra Passenger Train leaves Macon to connect with the Steam ships for New York.

Stages for Tallahassee and intermediate places connect with the road at Macon, Mondays, Wednesdays, and Fridays, and with Milledgeville at Gordon daily.

Passengers for Montgomery, Mobile and New Orleans take stage for Opelika from Barnesville through Columbus, a distance of 97 miles, or from Griffin through West Point, a distance of 93 miles.

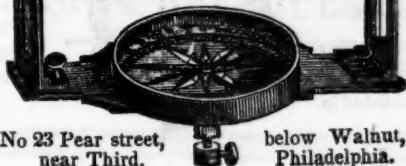
\* The Western and Atlantic railroad will soon be completed between Dalton and Chattanooga, a distance of 423½ miles from Savannah, of which due notice will be given.

† Head of the West Point and Montgomery railroad, on which the fare to Montgomery is about \$2.

### RATES OF FREIGHT FOR MERCHANDISE GENERALLY, FROM SAVANNAH TO MACON.

Measurement Goods.—Boxes of hats, bonnets, furniture, shoes, saddlery, dry-goods, and other measurement goods, per cubic foot - 13 cents.  
Crockery Ware, in crates, boxes or hhds, per cubic foot. - 10 "  
Goods by Weight, 1st class.—Boxes of glass, paints, drugs & confectionary, per 100 lbs., 50 "  
2d class—Sugar, coffee, rope, butter, cheese, lard, tobacco, leather, hides, copper, sheet and hoop iron, tin, hard and hollow ware, rice, boxes soap and candles, bagging, and other heavy articles not enumerated below, per 100 lbs., - 45 "  
3d class—Flour, bacon, liquors, pork, beef, fish, tallow and beeswax, per 100 lbs., - 40 "  
4th class—Mill-gearing, pig and bar iron, grind and millstones, nails, spikes and coal, 100 lb.30 "  
Barrels of beets, bread, crackers, potatoes, ice, fruit, oysters, onions, and all light bbls, each, 75 "  
Oil and molasses per hhd., (smaller casks in proportion) - \$6 00 "  
Salt per sack not exceeding 4 bushels, - 50 "  
Goods consigned to Thos. S. Wayne, Forwarding Agent, Savannah, will be forwarded free of commission. WM. M. WADLEY, Supt.  
Savannah, Ga., February 24, 1850.

ENGINEERS' AND SURVEYERS' INSTRUMENTS MADE BY EDMUND DRAPER, Surviving partner of STANCLIFFE & DRAPER.



No 23 Pear street, near Third, below Walnut, Philadelphia.

### GEORGIA RAILROAD. FROM AUGUSTA TO ATLANTA—171 MILES.

AND WESTERN AND ATLANTIC RAILROAD, FROM ATLANTA TO DALTON, 100 MILES.

This Road, in connection with the South Carolina Railroad, and Western and Atlantic Railroad, now forms a continuous line, 408 miles in length, from Charleston to Dalton (Cross Plains) in Murray county, Ga. 32 miles from Chattanooga, Tenn.

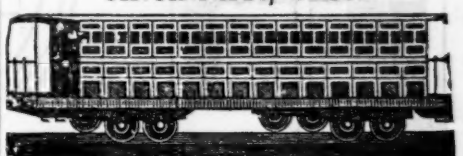
### RATES OF FREIGHT.

	Between Augusta and Dalton, 271 miles.	Between Charleston and Dalton, 408 miles.
1st class Boxes of Hats, Bonnets, and Furniture, per cubic foot	\$0 18	\$0 28
2d class Boxes and Bales of Dry Goods, Saddlery, Glass, Paints, Drugs, and Confectionary, per 100 lbs.	1 00	1 50
3d class Sugar, Coffee, Liquor, Bagging, Rope, Cotton, Yarns, Tobacco, Leather, Hides, Copper, Tin, Feathers, Sheet Iron, Hollow ware, Castings, Crockery, etc.	0 60	0 85
4th class Flour, Rice, Bacon, Pork, Beef, Fish, Lard, Tallow, Beeswax, Bar Iron, Ginseng, Mill Gearing, Pig Iron, and Grindstones, etc.	0 40	0 65
Cotton, per 100 lbs. -	0 45	0 70
Molasses per hogshead -	8 50	13 50
" " barrel -	2 50	4 25
Salt per bushel -	0 18	
Salt per Liverpool sack -	0 65	
Ploughs, Corn Shellers, Cultivators, Straw Cutters, Wheelbarrows -	0 75	1 50

German or other emigrants, in lots of 20 or more, will be carried over the above roads at 2 cents per mile.

Goods consigned to S. C. Railroad Company will be forwarded free of commissions. Freight payable at Dalton. F. C. ARMS, Sup't of Transportation.

### CAR MANUFACTORY CINCINNATI, OHIO.



KECK & DAVENPORT WOULD RESPECTFULLY call the attention of Railroad Companies in the West and South to their establishment at Cincinnati. Their facilities for manufacturing are extensive, and the means of transportation to different points speedy and economical. They are prepared to execute to order, on short notice, Eight-Wheeled Passenger Cars of the most superior description. Open and Covered Freight Cars, Four or Eight-Wheel Crank and Lever Hand Cars, Trucks, Wheels and Axles, and Railroad Work generally.

Cincinnati, Ohio, Oct. 2, 1848.

44ti

**NICOLL'S PATENT SAFETY SWITCH FOR** Railroad Turnouts. This invention for some time in successful operation on one of the principal railroads in the country, effectually prevents engines and their trains from running off the track at a switch, left wrong by accident or design. It acts independently of the main track rails; being laid down or removed without cutting or displacing them.

It is never touched by passing trains, except when in use, preventing their running off the track. It is simple in its construction and operation, requiring only two castings and two rails; the latter, even if much worn or used, not objectionable.

Working models of the Safety Switch may be seen at Messrs. Davenport, Bridges & Kirk's Cambridge Port, Mass., and at the office of the Railroad Journal, New York.

Plans, Specifications, and all information obtained, on application to the Subscriber, Inventor and Patentee. G. A. NICOLLS, Reading, Pa.

# FOWLER M. RAY'S METALLIC INDIA RUBBER CAR SPRINGS.

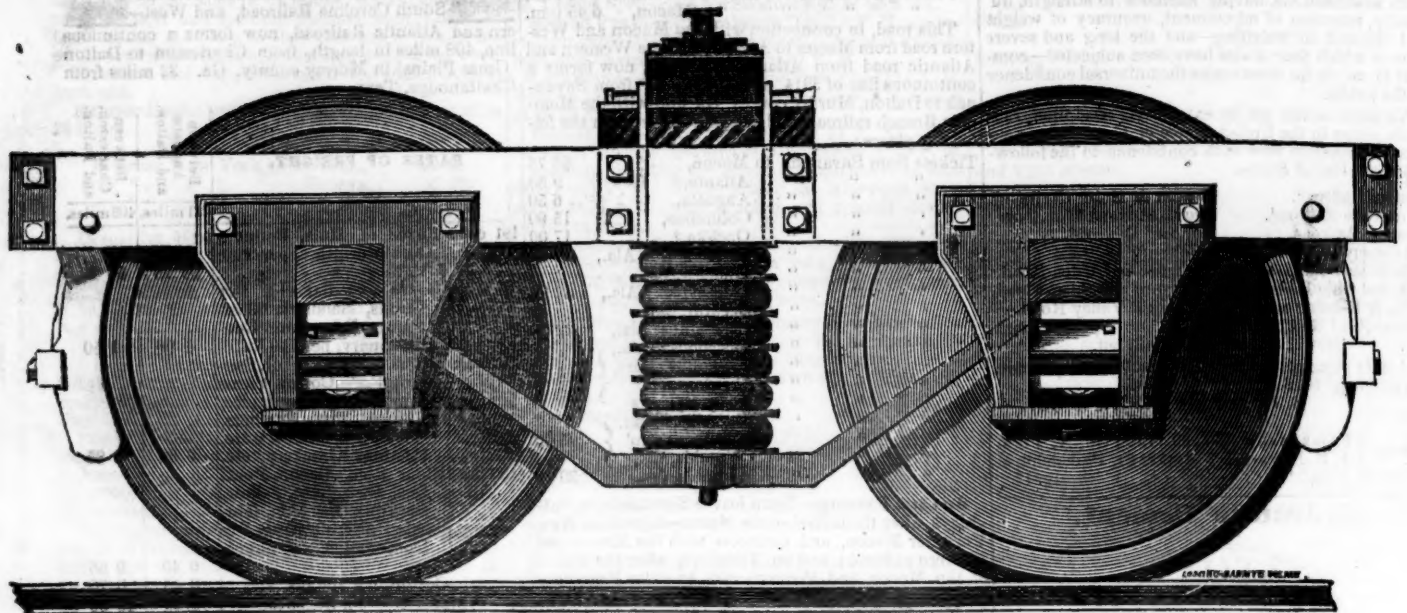


Fig. 1.

Fig. 2.

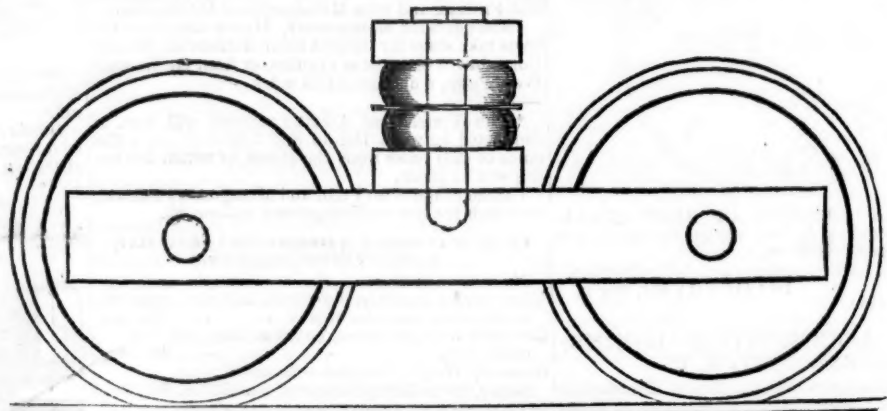
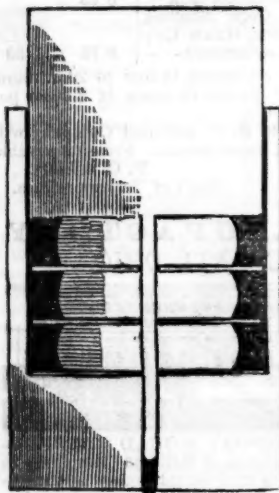


Fig. 3.

So much has been published for the purpose of misleading the public in regard to the inventorship of the India-rubber Railroad Spring, patented in the United States by Mr. W. C. Fuller, that the New England Car Company, proprietors of this invention, have deemed it proper, for the information of Railroad Companies, Car Builders and the public generally, to lay before them the facts upon which they found their claim to this invention, and to a Patent therefor.

Cut No. 1, Represents a cross section of the first model made by Mr. Tucker, under the direction of Mr. Ray, in the summer of 1844, and to which Mr. Tucker, Mr. Bradley and Mr. Bannister testify as being the model marked "B."

Cut No. 2, Represents the model made in 1845, to which Mr. Osgood Bradley and Gen. Thos. W. Harvey have testified.

Cut No. 3, Represents a rough sketch made by Mr. Ray in 1844, which he gave to a man about departing for England to take out some patents, who promised to write to Ray after his arrival in that country—which promise he has probably forgotten.

Mr. W. C. Fuller, of England, patented the above Spring in that country on the 23d October, 1845. He filed his enrollment April 23d, 1846, and on the 22d October, 1846, he took out a patent in the United States under the title, "For Improvement in Railway Carriages," when the improvement consisted in the spring, and not in the carriage.

The reader will perceive by the annexed testimony, that the India-rubber Railroad Car Spring was invented by Mr. Ray about two years previous to the date of Mr. Fuller's enrollment.

The Depositions are omitted for want of room, but will be published in full in the course of a few weeks.

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